ECGC LIMITED.

ECGC Limited, Moradabad Branch Office

Pandit Shankar Dutt Sharma Marg, Civil Lines,

Moradabad, Uttar Pradesh, PIN-244001,

Tel: - 0591- 2435244

Email – moradabad@ecgc.in

Website - www.ecgc.in

T E N D E R

Repair, Renovation (Civil work), Interior works and allied Plumbing and Electrical Works

ECGC Officers Residential Flats,

Located At

HIG A-1 & A-9,

Ram Ganga Vihar, Phase-I, Moradabad U.P.,

Pin Code- 244001

TENDER DOCUMENTS FOR

Repair, Renovation (Civil work), Interior works and allied Plumbing and Electrical Works

at ECGC Officers Residential Flats

HIG A-1 & A-9,

Ram Ganga Vihar, Phase-I, Moradabad Uttar Pradesh

Pin Code- 244001

DATE OF ISSUE	**27-08-2025**
PLACE OF ISSUE OF TENDER	Downloaded from ECGC website only.
LAST DATE OF RECEIPT OF TENDER	**17-09-2025**
PLACE OF RECEIPT OF TENDER	ECGC LIMITED, Moradabad Branch Office Pandit Shankar Dutt Sharma Marg, Civil Lines, Moradabad, Uttar Pradesh, PIN – 244001. Tel: -0591-2435244 Email – moradabad@ecgc.in Website - www.ecgc.in

OPENING OF TECHNICAL BID	Within 10 days from the tender closure date.
OPENING OF PRICE BID	Eligible Bidders shall be informed separately.
TIME OF COMPLETION	75 DAYS

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SECTION 01: INTRODUCTION

1.1 INVITATION TO BIDDERS

1. By way of this Notice Inviting Tender Document (hereinafter also referred to as '**the Bid Document'**/ '**the Tender Document**') ECGC Limited (hereinafter referred to as '**ECGC / the Company**'), a company wholly owned by Government of India set up in 1957, invites competitive Bids from reliable resourceful *bonafide* and experienced firms/ companies/ individual contractors (hereinafter referred to as ('**the Bidder(s)**'), who have experience in similar nature of work, for any Government of India Public Sector Companies/ PSU Banks/ PSU Insurance companies for **Repair, Renovation (Civil work), Interior Works and allied Plumbing and Electrical Works at ECGC Officers Residential Flats at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad, Uttar Pradesh, Pin Code-244001.**
2. The 'Technical Bid' and 'Financial Bid' along with the supporting documents would be received in physical form. The Financial Bid will be opened by authorized representative of the Company after Technical evaluation.
3. The Bidder(s) are advised to study the Tender Document carefully. Submission of Bids shall be deemed to have been done after careful study and examination of the Tender Document with full understanding of its implications.
4. The Bid Document can be downloaded from the Company's website www.ecgc.in.
5. Please note that all the required information as sought in the Tender document is required to be provided by the Bidders. Incomplete or Conditional information may lead to rejection of the Bid. The Company reserves the right to change the dates mentioned in this Tender Document, which shall be displayed on the Company's website. The information provided by the Bidder(s) in response to this TENDER Document will become the property of ECGC and will not be returned. ECGC reserves the right to amend, rescind or reissue this Tender Document and all subsequent amendments, if any. Amendments or changes shall be displayed at ECGC's website only.

1.2 SCHEDULE OF EVENTS

1.	Bid Document Availability	The Bid Document can be downloaded from website up to 21 days from Bid Invitation date 17-09-2025.
2.	Earnest Money Deposit	Rs.43,000.00 only
3.	Estimated Amount put to tender: Pre-Bid Queries (if any)	Rs.42.00 Lakhs
4.	Date and time limit for receipt of Bids	17-09-2025 up to 17:00 hours.
5.	Date of opening of Technical Proposals/Pre-qualification Bid	Within 10 days from the tender closure date.
6.	Date of opening of Financial Proposals	Within 10 days from the opening of technical bid.
7.	Validity period of Bid	90 days from the last date of submission of Bid
8.	Address for Communication and submission of Bid	ECGC Ltd., Moradabad Branch Office, Pandit Shankar Dutt Sharma Marg, Civil Lines, Moradabad, Uttar Pradesh, Pin-244001.
9.	Email	moradabad@ecgc.in
10.	Phone no.	0591- 2435244 Sandip Vyas, Branch Manager: 09601899039

NOTE:

1. In the event of any of the above-mentioned dates being declared as a holiday, the tender will be opened on the next working day at the appointed time.
2. Time lines are subject to change at the sole discretion of ECGC Ltd.

SECTION 02: DISCLAIMER

1. The information contained in this Tender Document or information provided subsequently to Bidder(s) in documentary form by or on behalf of ECGC, is provided to the Bidder(s) on the terms and conditions set out in this Tender document and all other terms and conditions subject to which such information is provided.
2. This Tender Document is neither an agreement nor an offer and is only an invitation by the Company to the interested parties for submission of Bids. The purpose of this Tender Document is to provide the Bidder(s) with information to assist the formulation of their Bids.
3. This Tender Document does not claim to contain all the information each Bidder may require. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this Tender Document and where necessary obtain independent advice at their own cost, if any.
4. The Company may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this Tender Document. No contractual obligation whatsoever shall arise from the Tender process until a formal letter from the duly authorized representative of the Company communicating award of Tender is received by the selected Bidder.
5. ECGC reserves the right to reject any or all the Bids received in response to this document or withdraw the Tender Document at any stage without assigning any reason whatsoever. The decision of ECGC in this regard shall be final, conclusive and binding on all the parties.
6. The information provided by the Bidder in response to this Tender Document will become the property of ECGC and will not be returned.

SECTION 03: INSTRUCTIONS FOR BIDDERS

3.1 GENERAL INSTRUCTIONS

1. Before Bidding, the Bidder(s) are requested to visit the ECGC website https://www.ecgc.in and also carefully examine the Tender Document and the General Terms and Conditions of the Contract (TCC) contained therein, and if there appears to be any ambiguity or discrepancy between any terms they should immediately refer the matter to ECGC for clarifications.
2. The Bidder, for the purpose of making the Bid, shall complete in all respects, the form(s) annexed to the Tender Document, quote the Rates with Amount (prices) and furnish the information/ documents called for therein and shall sign and put date on each of the forms/ documents in the space provided therein for the purpose.
3. The Bidder shall affix its initial on each page of the Bidding Document(s).
4. The Bid shall be signed by a person(s) duly authorized by the Bidder with signature duly attested. In case of a body corporate, the Bid shall be signed by the officer(s) duly authorized by the body corporate with its common seal duly affixed.
5. The Bid shall contain the address, Tel. No., WhatsApp number and e-mail id, if any, of the Bidder, for the purposes of serving notices required to be given to the Bidder in connection with the Bid.
6. The Bidders should note that the information, if any, regarding the site and local conditions, as contained in these Tender Documents has been given merely to assist the Bidders and is not warranted to be complete.
7. The Bidders, in their interest, are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their Bids, in respect of the site conditions including but not restricted to the following which may influence or affect the work or cost thereof under the contract:
    a.) Site conditions including access to the site, existing and required roads and other means of transport/ communication for use by him in connection with the work.
    b.) Requirement and availability of land and other facilities for his enabling works, stores, workshops etc.

c.) Ground conditions include those bearing upon transportation, disposal, handling and storage of materials required for the work or obtained therefrom.

d.) Source and extent of availability of suitable materials including water, etc. and labour (skilled and unskilled) required for work and laws and regulations governing their use and employment.

e.) The type of equipment and facilities needed for and in the performance of the work and for successful completion of work.

f.) All other information pertaining to and needed for the work including information as to the risks, contingencies and other circumstances which may influence or affect the work or the cost thereof.

7. The Bidders should note and bear in mind that ECGC shall bear no responsibility for the lack of acquaintance with the site and other conditions or any information relating thereto, on their part. The consequences of the lack of any knowledge as aforesaid on the part of the Bidders shall be at their risk and cost and no charges or claims whatsoever consequent upon the lack of any information, knowledge or understanding, shall be entertained or payable by ECGC.

8. Without the prior approval of the ECGC, no employee of ECGC is allowed to work under or as a contractor for two years after he retires from ECGC's services. Any Bid is liable to be rejected if either the Bidder or any of his employees is found at any time to be such a person who had not obtained the permission of ECGC as aforesaid before submission of the Bid or engagement in the Bidder's service.

9. Legal status of the Bidder shall be sole proprietor, a partner of a firm, Limited Liability Partnership or company or a consortium. If a Bidder is found to have applied severally for a single job all his applications will be rejected for that job. Bids by related parties will also be rejected.

10. The Bid form and the documents attached to it shall not be detached from one another and no alteration or mutilation (other than filling in all the blank spaces) shall be made in any of the forms or documents attached thereto. Any alterations or changes to the entries in the attached documents shall only be made by a separate covering letter otherwise it shall not be entertained for the Bidding process and the Bid shall be rejected.

11. The Bidder, irrespective of its participation in the Bidding process, shall treat the details of the documents as privileged, secret and confidential.

12. ECGC does not bind itself to accept the lowest of any Bid or any other Bid received and shall have the right to reject any Bid without assigning any reason whatsoever. ECGC also reserves the right to re-issue the Tender Document.
13. Bids shall be submitted in two parts i.e. (1) Technical/Pre-qualification Bid and (2) Financial/Commercial Bid.
14. The Bidder shall submit the Technical/Pre-qualification Bid as per the form provided under **Annexure – A** and the same shall be enclosed in single sealed envelope.
15. The financial/commercial Bid **Annexure H** should contain the following documents in one cover (folder) i.e. **Bill of Quantities** (**BOQ**). The Bidder shall quote their rate for each item in BOQ rate column, and arrive at the amount of that item by multiplying quoted rate with quantity of the item.
16. Both **Technical/Pre-qualification Bid and Financial Bid** are to be submitted concurrently during **submission of Tender in a sealed envelope at** ECGC Ltd. Moradabad Branch Office, Shankar Dutt Sharma Marg, Civil Lines, Moradabad, Uttar Pradesh, PIN-244001**.**
17. Supporting documents are to be submitted along with the Technical/Pre-qualification Bids. Incomplete or partial submission of relevant documents will lead to disqualification.
18. Each Bidder can submit only one Bid.
19. The Bidder should commit to provide the resources desired by ECGC for the entire duration of the engagement, at the agreed cost and terms and conditions.
20. Partial Bids will not be accepted and shall stand rejected. Bidder(s) shall have to quote for the entire scope of work.
21. All rates and total amount should be written both in figures and in words and if there is any discrepancy between the two, the lowest amount will only be accepted.
22. No questions or items in the annexures shall be left blank or unanswered. Where you have no details or answers to be provided a ‘No’ or ‘Nil’ or ‘Not Applicable’ statement shall be made as appropriate. Forms with blank columns or unsigned forms may be summarily rejected.
23. Bids not confirming to the requirement of the Tender Document may not be considered by ECGC. However, ECGC reserves the right at any time to waive any of the requirements of the Tender Document.

24. Bids must be received by ECGC at the address specified, no later than the date and time specified in the Schedule of Events in Clause 1.2.
25. ECGC is not responsible for non-receipt of Bids within the specified date due to any reason including postal delays or holidays.
26. Any Bid received after the deadline for submission of Bids prescribed, will be rejected. No Bids shall be returned.
27. ECGC reserves the right to verify the validity of Bid information and reject any Bid, where the contents are found incorrect whether partially or fully, at any stage of the Bidding process or thereafter.
28. If any information provided by the Bidder(s), during the Bidding process and thereafter, is found to be false, misleading, incorrect, whether knowingly or inadvertently, shall be grounds for termination of all commercial relationships between ECGC and the Bidder(s), including but not limited to, commercial relationships arising out of this Bid Document and the consequent Contract entered into with a successful Bidder for award of Work. All decisions taken by ECGC in this regard shall be binding and final.
29. A Bid is liable to be disqualified in the following cases:
    a.) Bid not submitted in accordance with the prescribed format in the Tender Document
    b.) Bid received with incomplete details/ incomplete format
    c.) Bid is not accompanied by all requisite documents
    d.) Bid is received after the due date for receipt of Bids.
30. The rates should be submitted only in the prescribed format. Non-conformance of quotations or BOQ received, in any other format, containing any notes, conditions, etc. may result in rejection of the Bid.
31. During the scrutiny, if it comes to the notice of the Company that the credential(s) and/or any other paper(s) of any Bidder is / are incorrect/ manufactured/ fabricated, that Bidder(s) shall not be allowed to participate in the tender and the Bid shall be rejected outright.
32. During the evaluation of the Bids or at any time before or after issuance of the work order, if it comes to the notice of the Company that the credential(s) and/or any other documents(s) of any Bidder is / are incorrect/ manufactured/ fabricated, and/or if any Bidder has made wilful misrepresentations or fraudulent claims as regards any material fact, such Bidder(s) shall be made ineligible to participate in

the Bidding process resulting in rejection of the concerned Bid or cancellation of the work order, as the case may be. The Company reserves its right to lawfully proceed against such Bidders, inter alia, for recovery of damages and/or otherwise.

33. The Bidder should ensure that there are no cuttings, over-writings, and illegible or undecipherable figures to identify the Bid as theirs. All such Bids may be disqualified on this ground alone. The decision of the Company shall be final and binding on the Bidder. **The Bidder should ensure that unrealistic (lower than workable rates, or excessively high rates), ambiguous or unquantifiable costs/ amounts are not included in the Bid, which would disqualify the Bid.**
34. The Company reserves the right to cancel the Tender Document or issue corrigendum notices to the Tender Document without furnishing any explanation and no claim in this respect will be entertained.
35. No queries for change in requirements/ specifications/ line items will be entertained in terms of the Bidding process, except if such changes are advised or are approved by the Company.
36. Before submitting the Bid, the Bidder, at his own responsibility, costs, and risk should visit the site to check the Drawing of Tender on Scale Print, ascertain the working conditions and local authority rules/ regulations/ restrictions if any and other information required for the proper execution of the work and obtain all information that may be necessary for preparing the Bid as mentioned in the Tender Document to its complete satisfaction. The Bidder is advised to inspect the site to ascertain the nature of site, access thereto, location, facilities for procurement of materials, labour rates and execution of the work. The Bidder shall be deemed to have full knowledge of the site and drawings irrespective of whether the Bidder actually inspects them.
37. Bidders must get acquainted with the proposed work and study drawings, designs, specifications, conditions of contract and other conditions carefully before Bidding. The Bidder shall seek clarifications on any item, if required, prior to submitting his Bid. No request for any change(s) in rates or conditions for want of information shall be entertained after receipt of the Bids.
38. For visiting the site, the Bidder may contact the nodal contact person via email/ phone/ letter addressed to the Branch Manager at the details mentioned below at point 39. Each such request shall be made at least 03 days in advance. The nodal contact person shall approve the site visit and make necessary arrangements for

proper/ complete access to the site for the Bidder(s). No Bidder has right to visit the site more than once, however, at the discretion of the nodal contact person, the Bidder(s) may be allowed multiple visits.

39. Necessary permission, wherever required, to be taken from the nodal contact person of ECGC- Mr. Sandip Vyas, Branch Manager, Moradabad. The site is located at ECGC Officers Residential Flats at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad U.P., Pin Code- 244001.
40. Bid(s) containing any condition leading to unknown/ indefinite liability, are liable to be summarily rejected.
41. Canvassing in connection with Bid(s) is strictly prohibited and the Bid(s) submitted by the Bidders who resort to canvassing would be liable to be rejected.
42. The Bidder should quote their (own) rates for undertaking the work.
43. The work is to be carried out on first/second floor level as per actual site condition and requirement. Please note that materials and machines may be required to be carried on head load and the same must be accounted in the costing and no separate cost shall be allowed for head load.
44. The quantities of various items given in the Bill of Quantity are an approximation. The quantities of work may vary at time of allotment/ execution of work. ECGC reserves the right to omit / delete any item(s) from quantities of work from the schedule before the order for purchase of the same has been placed by the Successful Bidder.
45. Rates:
    a.) The unit rate shall be deemed to be fixed price. In case of extra items, a record shall be maintained and shall be presented regularly to the Company for checking.
    b.) The rate quoted in the Bid shall also include electricity and water consumption charges for construction and erection. If power and water are available at the site, the Successful Bidder shall have to make his own arrangements to obtain the connections from the available sources at his own expense and maintain an efficient service of electricity/ power and water and the Successful Bidder shall pay for the services consumed and maintain the installations at his own cost. If no power and water are available at the site, the Successful Bidder shall have to make his own arrangements to obtain

power and water connection and maintain at his own expense an efficient service of electricity and power and shall pay for the electricity consumed.

c.) The rate quoted in the Bid by the Successful Bidder should include cost of 3 sets of 10" x 12" photographs done by a reputed professional photographer, of the completed work.

d.) Successful Bidder shall include cost of pest control treatment of the entire site, including white ants, roaches, rodents for one year from date of successful completion of the project duly certified by the Architect.

e.) The Bidder should note that the Bid should strictly be on the item rate basis and their attention is drawn to the fact that the rates for each and every item should be correct, workable and self-supporting. If called upon by the ECGC/ Architect, a detailed analysis of any or all the rates shall be submitted within 7 days unless specified otherwise. However, ECGC/ Architect shall not be bound to recognize the Successful Bidder's analysis.

f.) The works will be paid for as 'measured work' on the actual work done and not on a lump-sum basis.

46. The Successful Bidder shall coordinate and assist the Architect in obtaining all statutory approvals including MMC, CFO and any other State and Central rules in force. Any expenses incurred in obtaining such approvals are deemed included in the rates quoted by the Successful Bidder.

47. Rates of Extra Items shall be determined in the following order of preference whereby only when the first rate is completely ruled out, can the second rate be opted for and so on until the fourth rate which shall be the final rate if none of the preceding rates are found suitable:

a.) First: - Similar comparable item rate quoted in the BOQ,

b.) Second: - Similar nearest comparable item rate quoted in the BOQ,

c.) Third: - Nearest comparable CPWD Schedule or rates/or practices.

48. Variations/ Deviations: The price of all such additional items/ non tendered items will be worked out on the basis of rates quoted for similar items in the contract wherever existing or on engineering rate analysis based on prevalent fair price of labour, material and other components as required. The tender rates shall hold good for any increase or decrease in the tendered quantities up to variation of 25% for variation beyond ± 25%, the rate for the respective item may be received on mutually agreed terms.

49. The Successful Bidder shall submit the insurance cover for the work in the form of Contractor's All Risk Insurance Policy (CAR) policy within fifteen (15) days from the acceptance of award of tender letter, from insurance company approved by IRDA. The contractor shall insure the works and keep them insured until the successful completion of the project duly certified by the Architect, against loss or damage by fire and/or earthquake, flood.
50. The Successful Bidder shall deposit the policy and receipt for premiums paid with to ECGC along with the running bills. If the Successful Bidders defaults and failed to obtain such an insurance, ECGC may on behalf of the Successful Bidder obtain such insurance cover for the work and may deduct the amount of premium paid from any money due, or which may become due to the Successful Bidder.
51. The Successful Bidder shall not use modified/redirected old material of other projects.
52. Quantity of Work to be Executed: The quantities shown in the schedule of quantities are intended to cover the entire new structure indicated in the drawings however, ECGC reserves the right to execute only a part or the whole or any excess thereof without assigning any reason(s) thereof.
53. The following details are required to be submitted along with the Bid:
    a.) List of sub-contractors to be employed
    b.) List of equipment proposed to be deployed for work
    c.) Site Organization chart with bio-data of Resident Engineer and key personnel proposed to be deployed at site
    d.) Income Tax Clearance and Sales Tax clearance certificates
    e.) Power of Attorney in the name of person(s) who has signed the tender document
    f.) Programme of work
    g.) Each Bidder shall submit with his Bid a list of large works of like nature which the Bidder has executed giving details as to their magnitude and cost, the proportion of work done by the contractor in it and the timeframe within which the works were completed. The Bidder shall also submit along with the Bid a list mentioning the names of manufacturers of specialized items.

3.2 COST OF BIDDING

1. The Bidder shall bear all the Costs associated with the preparation and submission of its Bid, and ECGC shall in no case be responsible or liable for these costs, regardless of the conduct or outcome of the Bidding process

3.3 PREPARATION OF BIDS

1. The Bid prepared by the Bidder, correspondences and documents relating to the Bid exchanged between the Bidder and ECGC, and supporting documents and printed literature shall be submitted in English.
2. The Bidder shall provide self- attested photocopies of all credentials and other relevant documents such certificates, partnership deed, certificate of registration, current professional tax deposit challan/ professional tax clearance certificate, PAN card, Trade License from the respective Company, Municipality, Panchayat etc. for participating in this Bidding process of ECGC Limited. The Bidder shall ensure that all document submitted with the Bid are true and valid on the date of submission of the Bid and shall remain true and valid for the entire duration of the Work, if awarded.
3. Documents Comprising the Bid: Documents comprising the Bid include the following completed forms/documents in accordance with the clauses in the Bid and duly signed by the authorized representative of the Bidder and stamped with the official stamp of the Bidder (Board resolution, if applicable, authorizing representative to Bid and make commitments on behalf of the Bidder to be attached):
   a.) Technical/ Pre-qualification Bid Form as per Annexure A
   b.) Financial Bid as per Annexure H
   c.) Supporting documents as mentioned in Annexure B to G.

   Note:

   Forms/ supporting documents as mentioned above etc. should be submitted in one lot in one envelope.
4. Each Bidder is required to submit a duly filled Financial Bid Envelope, comprising of the Financial Bid Form as per Annexure H on the letter head of the Bidder.
5. Prices shall be quoted in Indian Rupees only and the quotation shall be in figures as well as in words.

6. Prices quoted by the Bidder shall remain fixed during the Bidder's performance of the Contract and shall not be subject to variation on any account, including exchange rate fluctuations, during the validity period of the Contract. **A Bid submitted with an adjustable price quotation will be treated as non-responsive and shall be rejected.**
7. GST, Cess etc. levied by Central or State Governments may vary and shall be charged as per actuals.
8. **Partial Bids will not be accepted and shall be rejected.** Bidder(s) shall quote for the entire scope of work as specified in ANNEXURE I
9. The Bid shall be typed or written in indelible ink and shall be signed by the Bidder or person(s) duly authorized to bind the Bidder to the Contract. The person or persons signing the Bids shall authenticate all pages of the Bids, except for un-amended printed literature.
10. All documents submitted in the context of this Tender Document, whether typed, written in indelible ink, or un-amended printed literature, should be legible/ readable. Non-compliance to this clause shall result in Bid being considered as non-responsive, and shall be rejected at the outset.
11. The Bid shall be in white A4 size papers, numbered with index and highlighted with technical/Pre-qualification specification details. Bids should be spirally bound or fastened securely before submission. Bids submitted in loose sheets shall be disqualified.
12. The documentary evidence of the Bidder's qualifications to perform the Contract in its Bid will be accepted only if it is established that the same are to ECGC's satisfaction.
13. The Bidder may include additional information which will be essential for better understanding of the Bid. This may include diagrams, excerpts from manuals, or other explanatory documentation, which would clarify and/or substantiate the Bid. Any material included here should be specifically referenced elsewhere in the Bid.
14. The Bidder shall provide a glossary of all abbreviations, acronyms, and technical terms used to describe the services or products proposed. This glossary should be provided even if these terms are described or defined at their first use or elsewhere in the Bid.

3.4 PERIOD OF VALIDITY OF BIDS

1. Bids shall remain valid for a period of 90 days from the last date of submission of Bids. The Bidders shall not be entitled during the period of validity, without the consent of ECGC, in writing, to revoke or cancel his Bid or to vary the Bid submitted or any terms thereof.
2. If the Bidder withdraws the Bid any time after deadline prescribed for submission of the Bid but before the expiry of the period of Bid validity, his Earnest Money Deposit shall be forfeited.
3. In exceptional circumstances, ECGC may solicit the Bidder's consent to an extension of the period of validity of the Bid on the same terms and conditions. The request and the responses thereto shall be made in writing. At this point, a Bidder may refuse the request without risk of exclusion from any future tenders or any debarment.
4. The Company reserves the right to call for fresh quotes any time during the validity period of the Bid, if considered necessary.
5. Addenda to the Bid document may be issued for clarifications or modifications to the design or contract terms.
6. Each addendum issued by ECGC will be published on the website of ECGC. All addenda issued by ECGC shall become part of Bid Document.

3.5 BID FORMAT

1. The Bidder shall submit the Technical/Pre-qualification and Financial Bids in two separate non-window envelopes, along with the requisite documents wherever mentioned and submit them simultaneously to the Company. All such envelopes should be duly sealed. All relevant envelopes, as per the Bid Document, shall be placed together in a one larger non-window envelope which is duly sealed. This larger envelope shall be called as the Bid Envelope. Bids are liable to be rejected if Technical/Pre-qualification Bid and Financial are not received together and in separate envelopes.
2. The Bid Envelope shall be superscribed with "Notice Inviting Tender for Repair, Renovation (Civil work), Interior Works and allied Plumbing and Electrical Works at ECGC Officers Residential Flats at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad, Uttar Pradesh, Pin Code- 244001."

3. The Tenders are to be submitted in one non-window envelope containing technical and financial bids in two separate non-window envelopes each sealed and identified as to envelope number and contents as indicated above. Both envelopes shall be contained in a large envelope super scribed " Repair, Renovation (Civil work), Interior Works and allied Plumbing and Electrical Works at ECGC Officers Residential Flats at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad, Uttar Pradesh, Pin Code- 244001." Bids are liable to be rejected if all Bids (Technical/Pre-qualification Bid and Financial Bid/Price) are not received together and in separate envelopes.

4. There shall be no more than three envelopes containing information/ documents as specified hereinbelow:

   a.) ENVELOPE NO. 1:

   The Envelope No.1 shall contain 1) A Technical bid as per Annexure A- 2) Supporting documents for the Technical bid and 3) an Earnest money deposit. This envelope shall contain the declaration so given in Annexure K: Code of Integrity. This envelope shall be superscribed "Envelope No.1 (Technical Bid and Earnest Money) for Repair, Renovation (Civil work), Interior Works and allied Plumbing and Electrical Works at ECGC Officers Residential Flats at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad, Uttar Pradesh, Pin Code- 244001."

   An Earnest Money Deposit for an amount of Rs. 43,000/- (Rupees Forty-Three Thousand) shall be made favoring ECGC Ltd. vide a demand draft or banker's cheque or insurance surety bond payable at Moradabad.

EMD	**Favoring**	**Amount (INR).**	**DD/Banker's Cheque payable at**
	ECGC Limited	**43,000/-**	**Moradabad**

   Calculation for the Earnest Money Deposit:

   Estimated cost of the project = Rs 42,78,871/- [Rupees Forty-Two Lakh Seventy-Eight Thousand Eight Hundred Seventy-One Only] for both flats

   The tenders not accompanied by the earnest money deposited by demand draft are liable to be rejected as NON-RESPONSIVE.

The Bidder must also submit the Mandatory Information strictly in prescribed manner. Technical/ Pre-qualification of the Bidder will be based on the Mandatory Information and supporting documents submitted along with the bid documents, as well as Architect/ Consultant scrutiny of the same and/ or inspection of works carried out by the Bidder. The Technical/ Pre-qualification Bid should not contain any price information. Such Bid, if received, will be rejected. ECGC reserves the right to accept or reject any Bid without assigning any reason whatsoever.

b.) ENVELOPE NO. 2:

Envelope No.2 shall contain the Financial Bid as per Annexure H on the letterhead of the Bidder duly filled in with complete details and description including all data which are to be supplied by Bidders as specified in this Bid Document. The Bidder shall quote their rate for each & every item in the Schedule of Quantities rate column, and arrive at the amount of that item by multiplying the quoted rate with the quantity of the item. The quoted rates are acceptable up to two decimal points. The bids containing fractions, any notes and conditions will be rejected. This envelope shall be super scribed "Envelope No.2 (Financial Bid) for Repair, Renovation (Civil work), Interior works and allied Plumbing and Electrical Works) at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad Uttar Pradesh, Pin Code- 244001"

5. Sealed tenders in the prescribed tender form should be addressed to Branch Manager, ECGC Moradabad Brach, Pandit Shankar Dutt Sharma Marg, Civil Lines, Moradabad, Uttar Pradesh, PIN – 244001 and super scribed "Repair, Renovation (Civil work), Interior works and allied Plumbing and Electrical Works) at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad Uttar Pradesh, Pin Code- 244001"

3.6 ELIGIBILITY CRITERIA

1. Participants fulfilling the following eligibility criteria will be considered as technically qualified:

   a.) Average financial turnover during the last 3 years, ending 31st March of the previous financial year, should be at least 50% of the estimated cost for similar works and,

   b.) Experience of having successfully completed similar works during last 5 years ending last day of month previous to the one in which applications are invited should be either of the following: -

      i. One similar completed work costing not less than the amount equal to 80% of the estimated cost.

      or

      ii. Two similar completed works costing not less than the amount equal to 50% of the estimated cost.

      or

      iii. Three similar completed work costing not less than the amount equal to 40% of the estimated cost.

2. Similar work means repair, renovation (civil work), interior works and allied plumbing and electrical works of same nature /magnitude carried out for public sectors financial institutions, public sector banks, LIC, GIC, involving, civil work repair and renovation in nature (re-plastering, water proofing, grills works, flooring, painting etc.), interior works (door, cabinets modular kitchen, pop, polishing etc.), plumbing, (water supply, and plumbing, fitting and fixtures), electrical work, (chasing re-conduiting and wring, fittings fixtures, electrical panel, earthing etc.)

3. In addition to above, the criteria regarding satisfactory performance of works, personnel (employed skilled workers), establishment, detail of infrastructure, equipment etc. shall be evaluated from Technical Bid documents, verification of documents and work performance.

Note:

- Copy of Completion certificate duly signed by the competent authority pertaining to past works shall be submitted with the Bid.
- Payment Certificate will not be treated as a credential.
- Copy of completion certificate without actual date of completion will not be considered valid.

4. Audited balance sheet for previous three financial years must be submitted as per Annexure- B.

5. **A declaration (Affidavit) in this respect has to be furnished by the prospective Bidders as per prescribed format vide Annexure- G without which the Technical/ Pre-qualification Bid shall be treated non-responsive.**

3.7 SUBMISSION OF BIDS

1. All envelopes should indicate the name and address of the Bidder on the cover.
2. The inner envelopes shall be addressed to the Company at the address given for submission of Bids in Section 1 above and marked as described in Clauses above or to be submitted physically at ECGC Limited, Moradabad Branch Office, Pandit Shankar Dutt Sharma Marg, Civil Lines, Moradabad, Uttar Pradesh, Pin – 244001
3. The outer envelope shall:
   a.) be addressed to the Company at the said address;
   b.) bear the Project Name.
4. If the envelope is not sealed and/ or marked, ECGC will assume no responsibility for the Bid's misplacement or its premature opening.

3.8 DEADLINE FOR SUBMISSION OF BIDS

1. The Bids must be received by ECGC at the address specified, no later than the date & time specified in the "Schedule of Events" in Clause 1.2.
2. In the event of the specified date for submission of Bids being declared a holiday for ECGC, the bids will be received up to the appointed time on the next working day.

3. ECGC may, at its discretion, extend the deadline for submission of Bids by amending the appropriate terms and conditions in the Bid Document, in which case, all rights and obligations of ECGC and Bidders previously subject to the deadline will thereafter be subject to the extended deadline, which would also be advised to all the interested Bidders on the Company's website.
4. Any Bid received after the deadline for submission of Bids prescribed, will be rejected.

3.9 MODIFICATIONS AND WITHDRWAL OF BIDS

1. The Bidder may modify or withdraw its Bid after the Bid's submission, provided that written notice of the modification, including substitution or withdrawal of the Bids, is received by ECGC, prior to the deadline prescribed for submission of Bids. The Bidder may do so without any penal action including debarment or exclusion from any future tenders/ contracts/ business, provided the Bidder submits its decision to the Company in writing, along with its reasons for the same.
2. No Bid shall be modified after the deadline for submission of Bids.
3. No Bid shall be withdrawn in the interval between the deadline for submission of Bids and the expiration of the period 90 days from last date of submission of Bid. Withdrawal of a Bid during this interval shall result in forfeiture of EMD and may further result in penal action including debarment or exclusion from any future tenders / contracts / business.
4. Bidders who wish to be present at the time of opening of Bids may be present at the Office address as mentioned above on the date and time fixed for opening of the Tender.
5. Bids once received shall not be returned after deadline for submission of Bids.

3.10 PRELIMINARY EVALUATION

1. The Company will examine the Bids to determine whether they are complete, whether the required formats have been furnished, the documents have been properly signed, and that the Bids are generally in order.
2. Prior to the detailed evaluation, the Company will determine the responsiveness of each Bid to the Bid Document. For purposes of these clauses, a responsive Bid is one, which conforms to all the terms and conditions of the Bid Document without

any deviations. However, deviations, if unavoidable, should be indicated separately indicating the specific page number and clause number against which the deviations are made. Wherever specifications of certain works are not available they shall be deemed to be done as per relevant I.S code.

3. The Company's determination of a Bid's responsiveness will be based on the contents of the Bid itself, without recourse to extrinsic evidence.
4. If a Bid is not responsive, it will be rejected by the Company.
5. During the scrutiny, if it comes to the notice of the Company that the credential(s) and/or any other paper(s) of any bidder is / are incorrect/ manufactured/ fabricated, that bidder(s) will not be allowed to participate in the tender and that application will be rejected outright. If found necessary, the Company shall verify the credential(s) and/or other document(s) of the Bidders before opening of Financial bid and/or of the lowest Bidder before issuance of the work order. After verification, if it is found that the document(s) submitted by the lowest Bidder is/ are either manufactured or false, the work order shall not be issued in favour of the said Bidder.
6. During the evaluation of the Bids or at any time before or after issuance of the work order, if it comes to the notice of the Company that the credential(s) and/or any other documents(s) of any Bidder is/ are incorrect/ manufactured/ fabricated, and/ or if any bidder has made willful misrepresentations or fraudulent claims as regards any material fact, such bidder(s) will be made ineligible to participate in the tender process resulting in rejection of the concerned bid or cancellation of the work order, as the case may be. The Company reserves its right to lawfully proceed against such bidders, inter alia, for recovery of damages and/or otherwise.

3.11 EVALUATION OF TECHNICAL BIDS

1. Sealed bids shall be opened by designated Tender Opening Committee at the specified time and place.
2. Only those Bidders and Bids which have been found to be in conformity of the eligibility terms and conditions during the Technical Bid evaluation would be taken up by the Company for further detailed evaluation. The Bids which do not qualify the eligibility criteria and all terms during Technical evaluation will not be taken up for further evaluation.

3. The Company reserves the right to evaluate the Bids on technical & eligibility parameters.
4. The Technical Evaluation would be first carried out as per the Eligibility Criterion detailed in Clause 3.6 above and relevant Annexure such as A, B, C & G.
5. During evaluation and comparison of Bids, the Company may, at its discretion ask the Bidders for clarification of their Bid. The request for clarification shall be in writing and no change in prices or substance of the Bid shall be sought, offered or permitted. No post Bid clarification at the initiative of the bidder shall be entertained.

3.12 EVAUATION OF PRICE BIDS AND FINALISATION

1. The Bidder(s) from the list of earlier shortlisted Bidder(s) shall be deemed eligible for further evaluation and Financial bids for these Bidder(s) shall be opened.
2. Company may waive off any minor infirmity or non-conformity or irregularity in a Bid, which does not constitute a material deviation, provided such a waiving does not prejudice or affect the relative ranking of any Bidder. Bidder(s) having any doubt/ queries/ concerns with any clause of this document or selection process shall raise their concern within 7 (Seven) days of release of Tender Document. ECGC will not be liable to accept or provide any explanation towards any doubt/ concerns later on whatever the same may be.
3. An item rate tender containing a percentage below/above will be summarily rejected. However, where a tenderer voluntarily offers a rebate for payment within a stipulated period this may be considered.
4. The queries may be communicated only through the e-mail id provided, which is moradabad@ecgc.in
5. Bidder(s) bidding in the process shall give as a part of the Bidding documents a statement on their letter head, as per the format provided under Annexure - E, that they have no objection with any clause of the Tender Document.

3.13 CONTACTING THE COMPANY

1. The Bidder may submit in writing any tender enquiry on matters where clarifications or additional information is desired as per the dates mentioned in the schedule.
2. If considered appropriate, ECGC Ltd reserves the right to issue addendum(s) or

amendment(s) to any condition/ specifications/ schedules to all Bidders before the date of submission. Tenders submitted by the Bidders shall be deemed to cover the effect of such addendum(s)/ amendment(s) issued and such addendum(s)/ amendment(s) duly signed by the Bidders shall be submitted along with the Bid.

3. No Bidder shall contact the Company on any matter relating to its Bid, from the time of opening of Financial Bid to the time the Work order is issued.

4. Any effort by a Bidder to influence the Company in its decisions on Bid evaluation, Bid comparison or Award of contract may result in the rejection of the Bidder's Bid and may be barred from any future Tenders/ contracts/ business with ECGC.

3.14 AWARD CRITERIA

1. Only the Bidders who qualify for the technical bid shall be eligible to participate in the financial bid. The bidder who quotes the lowest (L-1) shall be awarded the Contract. ECGC will notify the successful Bidder in writing, by letter or by e-mail, that its Bid has been accepted. The notification of award will constitute the formation of the offer to contract. The selected Bidder should convey acceptance of the award of a contract by returning a duly signed and stamped duplicate copy of the award letter within 10 (ten) working days of receipt of the communication.

2. In case the selected Bidder fails to accept the award then the L2 Bidder among the Bidder(s) (other than the Bidder who has failed to accept the award) will be considered for the award and so on. On acceptance of the tender, the name of the authorized representative(s) of the Bidder who would be responsible for taking instructions from the Company/Architect shall be communicated to the Company/Architect.

3. The Bidder shall submit the insurance cover for the work in the form of the Contractor's All Risk Insurance Policy (CAR) policy within seven (7) days from the acceptance of the award of the tender letter, from the insurance company approved by IRDA.

4. ECGC Ltd. will not be bound to accept the lowest bid and reserves the right to accept or reject any or all the tenders without assigning any reasons whatsoever.

3.15 COMPANY'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

1. Notwithstanding anything mentioned above, ECGC reserves the right to accept or reject any Bid or to cancel the Bidding process and reject all Bids at any time prior to awarding the Contract, without incurring any liability to the affected Bidder(s) or any obligation to inform the affected Bidder(s) of the grounds for ECGC's actions.
2. All decisions taken by the Company are binding and final.

3.16 EARNEST MONEY DEPOSIT (EMD) & PERFORMANCE BANK GUARANTEE

1. Earnest Money may be deposited through Demand Draft (DD)/Banker's Cheque/ Insurance Surety Bond issued from any schedule bank in favour of "ECGC Limited" payable at Moradabad. It should be submitted under sealed cover along with the Bid documents. Bids submitted without EMD are liable to be rejected. However, all Micro and Small enterprises (as defined in the Micro, Small and Medium Enterprises Development Act 2006) are exempted from depositing EMD amount. The eligible firms claiming exemption under Micro and Small Enterprises need to submit certificate of Registration under Ministry of Micro, Small and Medium Enterprises, GOI.
2. EMD of the unsuccessful bidders will be returned to them within a reasonable period of time and without any interest. The EMD of successful Bidder shall be refunded after submission of 3% Performance Bank Guarantee. No interest will be paid on EMD.
3. The Earnest Money shall be forfeited –
    a.) If the Bidder withdraws the Bid after the deadline prescribed for submission of Bids.
    b.) In case of a Successful Bidder, if the Bidder fails within the specified time limit to accept the award of contract.
    c.) If the Successful Bidder does not start work within the time specified in tender document or refuses accept the award of tender.

4. The Successful Bidder shall furnish Performance Bank Guarantee of 3% of the value of the contract within 07 days of acceptance of tender award letter. The Performance Bank Guarantee will be released after successful completion of the project duly certified by the Architect. The Company may terminate the Contract in the event the Successful Bidder fails to furnish the Performance Bank Guarantee for an amount equal to 3% of the value of the contract or fails to execute the agreement within specified period.

Note: It may be noted that the work under the contract will have to be carried out between morning 8.00 AM to evening 6.00 PM, so as to cause minimum nuisance for other occupants. Successful Bidder should follow rules of the city regulations and the applicable municipal laws for construction work and building guide lines for such civil work strictly.

SECTION 04: TERMS AND CONDITIONS OF CONTRACT

As stated in the draft Service Agreement at Annexure J

SECTION 05: ANNEXURES

ANNEXURE A: ELIGIBILITY/ TECHNICAL/ PRE-QUALIFICATION BID FORM

Sr No	Description	Details	
1	Name of the Company/ Firm/ Individual		
2	Legal Status (Proprietorship, Partnership, Limited Liability Partnership, Company etc.)	<Certified copy of the Certificate of Incorporation of Company issued by the Registrar of Companies / Partnership Deed etc. to be attached>	
3	Registered Physical Address		
4	Correspondence Address		
5	Business profile of the company/ firm (attach a separate write-up or brochure regarding business activities of the company/ firm)		
6	Date of incorporation		
7	Board of Directors/ Management/ Promoters/ Partners/ Proprietor	(i)	
		(ii)	
		(iii)	
		(iv)	
		(v)	
8	Contact Person Details (Name, Landline and mobile Number, e-mail id)		
9	E-mail id of the bidder		

10	PAN details of the bidder	<copy required>
11	TIN of the bidder	<copy required>
12	GST Registration No.	<copy required>
13	Work experience in similar nature of work in terms of Clause 3.6 of the Tender Document	< Evidences in form or work completion certificates should be provided along with the bid >
14	Annual turnover for the last five financial years	< IT returns acknowledgments and / or Audited Financial Statements / statements certified by Chartered Accountants to be provided for last five financial years ending on 31.03.2025
15	Power of Attorney/ authorization for signing the bid documents	
16	The Bidder should not have been blacklisted/ barred/ disqualified by any Govt. Financial Institutions/ Banks/ Government/ Semi Government departments/ regulator/ statutory body/ judicial or any other authority in India.	< A self-declaration by the Bidder on its letter head>
17	The Bidder's Firm should not be owned or controlled by any Director or Employee of ECGC Ltd.	< A self-declaration by the Bidder on its letter head>

18	Projects taken up and completed during last 5 years	Details
19	Any project not completed due to any reason in last 5 years	Details
20	Any penalty imposed for delay or no-completion in past 5 years	Details
21	Status of ongoing/ completed litigation & arbitration related to projects	Details

…….

Signature of the authorized Signatory of Company/Firm/ Individual (Company Seal)

Name:	Designation:
Date:	Contact No. (Mob.):
Place:	Email ID:
	Fax No.:

ANNEXURE B: ANNUAL TURNOVER FOR THE LAST THREE FINANCIAL YEARS

Furnish certified copies of audited balance sheet and profit & loss account (audited) for the preceding five years:

S.No.	Financial Year	Turnover from renovation and repairing work (Rs in Lakhs)	Turnover from all other sources (Rs in Lakhs)	Remarks
1.				
2.				
3.				
4.				
5.				

Note:

1. Please attach certified copies of the latest Income Tax, Balance Sheet and Profit & Loss account statement to support the information furnished, failing which your firms shall be summarily disqualified.

2. Where copies are required to be furnished, the same are to be self-certified.

3. Please attach Certificate of financial soundness of your firm issued by Bank

4. Additional sheets may be used for providing information and the same shall be signed and stamped by the Bidder.

SIGNATURE OF THE BIDDER WITH SEAL

DATE:

ANNEXURE C: EXPERIENCE PROFILE DETAILS OF SIMILAR WORKS AND ALL WORKS COMPLETED IN THE LAST FIVE YEARS

S. No.	Description of the Work	Name and address of the Purchaser	Contract No. and date	Date of award of work	Stipulated date of completion	Actual date of completion	Value of completed work (in Lakhs)	Penalty if any	Work completion certificate enclosed
1.									
2.									
3.									

NOTE:

1. The Bidder must enclose the work completion letter or certificate issued by the competent authority for earlier works. Any other letter such as work order copies, running bill advice, architect's letters etc. shall not be accepted as proof of having completed the works.
2. Additional sheets may be used for providing information and the same shall be duly signed and stamped by the Bidder.

SIGNATURE OF THE BIDDER WITH SEAL AND DATE:

ANNEXURE D: BANK DETAILS OF THE BIDDER

Sr No	Description	Details
1	Name of the Bank	
2	Address of the Bank	
3	Bank Branch IFSC Code	
4	Bank Account Number	
5	Type of Account	

…….

Signature of the authorized Signatory of Company/Firm/Proprietor

(Company Seal)

Name:

Designation:

Contact No (Mobile):

Email Id:

ANNEXURE E: ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

To,

ECGC Limited

Moradabad Branch

Pandit Shankar Dutt Sharma Marg, Civil Lines

Moradabad, Uttar Pradesh, PIN-244001

Dear Sir/Madam,

SUBJECT: RESPONSE TO THE NOTICE INVITING TENDER FOR "Repair, Renovation (Civil work), Interior works and allied Plumbing and Electrical Works at ECGC Officers Residential Flats at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad Uttar Pradesh, Pin Code- 244001.

Having examined the Notice Inviting Tender Document including Annexures, the receipt of which is hereby duly acknowledged, we, the undersigned offer to provide services in accordance with the scope of work as stated in the TENDER Document within the cost stated in the Bid.

If our Bid is accepted, we undertake to abide by all terms and conditions of this TENDER.

We certify that we have provided all the information requested by ECGC in the requested format. We also understand that ECGC has the right to reject this Bid if ECGC finds that the required information is not provided or is provided in a different format not suitable for evaluation process for any other reason as it deems fit. ECGC's decision shall be final and binding on us.

We acknowledge and accept that if, at any stage during the bidding process, or after the award of the contract, it is found that any document or information was false, fabricated or misleading, whether knowingly or unknowingly, or if any of the information ceases to be true during the course of the bidding process, or thereafter including the execution of the contract, ECGC reserves the right to cancel the bid and/or terminate the contract and we shall be liable for compensation and damages for any losses, costs, or expenses incurred by ECGC as result of such false or misleading documents or information, whether intentional or not.

We agree that ECGC further reserves the right to amend, rescind or reissue this TENDER Document and all amendments any time during the bidding process.

We agree that we have no objection with any of the clauses, annexures and amendments and the bidding process of this Tender Document.

…….

Signature of the authorized Signatory of Company/Firm/Proprietor

(Company Seal)

Name:

Designation:

Contact No (Mobile):

Email ID:

ANNEXURE F: FORMAT FOR LETTER OF AUTHORIZATION

(The letter of authorization shall be submitted on the Bidder's letterhead)

To

ECGC Limited

Moradabad Branch

Pandit Shankar Dutt Sharma Marg, Civil Lines

Moradabad, Uttar Pradesh, PIN-244001

Letter of Authorization for Attending Bid Opening for Tender

Any one of the following persons is hereby authorized to attend the bid opening on _____(date) in the tender for work: **"Repair, Renovation (Civil work), Interior works and allied Plumbing and Electrical Works at ECGC Officers Residential Flats at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad Uttar Pradesh, Pin Code-244001** mentioned on behalf of M/s._____ (Name of the Bidder) in the order of preference given below:

Order of Preference Name Designation Specimen Signature

I

II

(Authorized Signatory of the Bidder)

Date_____

(Company Seal)

1. Maximum of one person can be authorized for attending the bid opening.
2. Permission for entry to the hall where bids are opened may be refused in case authorization as prescribed above is not submitted or for any other exigency.

ANNEXURE G: AFFIDAVIT

AFFIDAVIT

(To be furnished in Non – Judicial Stamp paper of appropriate value duly notarized)

1.I,_____
_____the under-signed do certify that all the statements made in the attached documents for the work "Repair, Renovation (Civil work), Interior works and allied Plumbing and Electrical Works at ECGC Officers Residential Flats at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad Uttar Pradesh, Pin Code- 244001 are true and correct. In case of any information submitted proved to be false or concealed, the application may be rejected and no objection / claim will be raised by the under-signed.

2. The under-signed also hereby certifies that neither our firm/partners nor any of constituent partners have been debarred to participate in tender by ECGC LTD. or any other body during the last 5 (five) years prior to the date of this NIT.

3. The under-signed would authorize and request any Bank, person, Firm or Company to furnish pertinent information as deemed necessary and / or as requested by the company to verify this statement.

4. The under-signed understands that further qualifying information may be requested and agrees to furnish any such information at the request of the Authority.

5. Certified that I have applied in the tender in the capacity of individual / as a partner of a firm & I have not applied severally for the same tender. I undertake to sign Service Agreement with ECGC Ltd. on behalf of our Company/ Firm if selected as successful bidder and on acceptance of Award Letter as per Draft in Annexure- J attached in the NIT

6. I/ We hereby agree and undertake that we have not directly or through any other person or firm offered, promised or given nor shall we offer, promise or give, to any employee of ECGC involved in the processing and/or approval of our proposal/ offer/ bid/ tender/ contract or to any third person any material or any other benefit which he/she is not legally entitled to, in order to obtain in exchange advantage of any kind whatsoever, before or during or after the processing and/or approval of our proposal/offer/bid/tender/contract.

_____

Signature of the declarant identified by me

_____

Signature of Advocate

_____

Seal & Signature of Notary

ANNEXURE H: FINANCIAL BID

ANNEXURE I: SCOPE OF WORK

The scope of work shall be generally as given in the Bill of Quantity, summary of items and as mentioned below:

Dismantling, furniture and civil work:

- Providing and fixing covering for outer facade during construction activity
- Dismantling of toilets
- Dismantling of Bath room
- Dismantling/Removing of kitchen internal
- Removing of existing decay plaster
- Dismantling/ removing of existing windows /door, grill, brick work, existing wooden wardrobe and cabinet, existing conduiting and wiring, electrical plates and switches, A/C piping work, existing fibre sunshade above windows

Repairing

- cement plaster on existing roof slab bottom after treating existing exposed steel with Nito bond

Civil work

- Brickwork
- cement plaster on new brick work
- Lintel
- parapet coping
- Front boundary wall construction work
- Water proofing in toilets
- Water proofing on terrace and mumty terrace
- Providing base for keeping two water tanks
- Water tanks

Interior finishing

- Aluminium window and grill work
- M.S main entry gate

- Painting and pop
- Flooring and wall tiles
- Main entry door

Wood work

- Doors in laminate finish
- cabinets and wardrobe
- Providing / fixing LCD/ display cabinet at drawing room
- Modular kitchen
- Kitchen Overhead cabinets

Plumbing and toilets:

- Sanitary fixture & accessories
- Water supply system and sanitary
    1. (Soil, Waste, Vent & Rain water Pipes and accessories)
    2. pipes & fittings will be "C.P.V.C.
    3. thermal insulation over hot water pipes
    4. G.M. float valve of Leader makes with brass rod and copper
- External plumbing work
    1. Providing All related materials & constructing 300 x 300 x 300 mm masonry chamber for Gully trap
    2. Providing & fixing C.I. Grating with including necessary cutting and making good (NECO / RIF)
    3. brick masonry rectangular type road gully chamber

Air Conditioning Work:

- Copper pipe
- Drain pipe
- Pvc batten
- Extra Electrical interconnecting cable

Electrical work:

- Point wiring

- Conduiting and wiring for telephone, computer & t.v. system.
- Supply& fixing of lighting fixtures /fan
- Earthing system
- Distribution boards
- Cables, mains, submains

GENERAL DATA

GENERAL

The work under this tender shall be executed strictly in accordance with constructional and material requirements defined under these specifications. The Vendor shall carefully acquaint himself with these specifications to determine his contractual obligations for work. The conditions of these specifications will be binding on the Vendor and no deviation shall be permissible unless specifically approved by the Project Manager/Architect in writing.

DRAWINGS/DIMENSIONS

Figured dimension on drawings shall supersede measurements by scale and drawings to a large scale take precedence over these to a smaller scale. Special dimensions or directions in the specifications shall be checked on site. The levels, measurements and other information concerning the existing site as shown on the drawings are believed to be correct, but the Vendor shall verify them for himself and also examine the nature of the ground as no claim or allowance whatsoever shall be entertained hereafter on account of any errors or omissions in the levels or the description of the ground to be different from what was expected or shown in the drawings.

CO-ORDINATION OF DRAWINGS

Before commencement of work, the Vendor shall correlate all relevant structural, architectural and service drawings and satisfy himself that the information available there from is complete and unambiguous.

The Vendor shall be responsible for any error/difficulty in execution/damage incurred owing to any discrepancy in the drawings which has been overlooked by him and has not been brought to the notice of the Project Manager/Architect before execution.

B.I.S. CODES OF PRACTICE

Wherever any reference is made in the specifications to any Bureau of Indian Standards (B.I.S.) or Indian Standards (I.S.) Code of practice, it shall be understood to indicate

the latest version of the code of practice in usage all the time of construction. All civil and structural work shall carried out as per latest C.P.W.D. specification for material and workmanship unless specified otherwise.

SETTING OUT

The VENDOR shall be responsible for the true and proper setting out of the work in relation to original points, lines and levels of reference and for the correctness of the levels, dimensions and alignment of all part of the work and for the provision of all necessary instruments, appliances and labor in connections therewith. If any time during the progress of the work any error appears or arises in the position of levels, dimensions and alignment of any part of work, the Vendor shall at his own expenses rectify such errors to the satisfaction of the Architect. The checking of any line or level by the Architect shall not in any way relieve the Vendor of his responsibilities. The Vendor shall provide all required setting out pillars and one or more permanent bench marks in some place before the start of work from which all important center lines and levels for excavations will be set.

.Exterior Grade Silicon Coating for Exposed Brick/stone Protection:

General: Silicon surface coatings are manufactured in India by M/S. Pidilite Industries Ltd, Roff-Hypel, Product code 224.

Composition: Product is available in concentrate form in packaging units of 20 kgs. , color: clear, coverage is 40 to 60 Sq.mtr. / litre, / Coat of diluted solution 1:9 (Hypel : Water) Coverage depends upon porosity of Substrate.

PREPARATION OF SURFACE

Ensure substrate is dry.

Remove dust/dirt and scrape of old paints, chalking or sanding surface (by mechanical or manual means) and all loose matter on substance. Remove forming oil residues on concrete with hot steam or commercially available special forming oil remover.

Mechanically clean surface with dirt/ contamination and/or algae growth or treat with hot vapour or special agents.

Mechanically remove weathered mineral paint with bad adhesion properties.

Repair damaged or cracked surface with stopper according to structure.

Consolidate strongly absorbent base surface old heat insulation system facades with commercially available special removers.

Ensure substance to be coated is even to get good coverage. If surface is too smooth, sand the surface before application.

Plaster and sea all cracks in the substrate. Use plaster of Paris putty for interiors and cement for exteriors.

Procedure for making trough for application:

Pour the prescribed amount of water (given in mixing ratio) into a clear plastic tub or trough. (The amount of water may be increased or decreased slightly depending on climatic conditions).

Pour proportionate silicon agent / concentrate in desired proportion.

Blend the silicon agent / concentrate with water.

Check for lumps in the mixture. If lumps founds, mix thoroughly again.

Allow the dough is ready is application.

Method of Application:

Prepare surface as described above.

Take the liquid and apply into the surface by Spray gun.

At the end of the day, complete the job at a corner and as a straight line edge. This will ensure an even coating on continuation the next day. Two or more coats are desired on the surface. Consumption of material shall be 15 Sq.Mtr / kg of silicon after three coats. (Finished surface could not be easily examined/ observed with naked eyes, for desired result after complete application; hence, Actual material consumption shall be measured with proper material consumption records at site. Or any suitable methods as found appropriate by the Company or Architect to ensure appropriate material consumption to achieve desired end results.)

Ensure that the coated area is not tampered with or exposed to rain for a minimum of two days after completion of application. This is the minimum protection required.

All shuttering and padding shall be self supporting, (shall not support, rest on the wall of application.) to ensure application wall is not damaged prior to coating and coat surface is not damaged after coating. Cup lock shuttering shall be preferred.

2. P.O.P. PUNNING

GENERAL

Plaster of Paris punning (Plaster) is generally applied on already cement plastered surface to give it a smooth and even surface.

PREPARATION OF SURFACE

Projecting burrs of mortar formed during existing cement plaster shall be removed. The surface shall be scrubbed clean with wire brushes. In addition the plastered surface shall be pock marked with painted tool, at spacing of not more than 4 cm centers and depth of pocks to be approx. 3mm deep. This is to ensure a proper key for the plaster. This surface shall be cleaned of all oil and grease marks etc.

PLASTER OF PARIS

The plaster of Paris shall be of semi-hydrate variety calcium sulphate. Its fineness shall be such that when sieved through a sieve of I.S. sieve designation 3.35 mm or 5 minutes, after drying the residue left on it shall be not more than 1% by weight. It shall not be too quick setting. Initial setting time shall not be less than 17 minutes.

APPLICATION

The material will be mixed with water to a workable consistency. Plaster of Paris shall be applied directly on the wall plasters in suitable sizes panels and finished to smooth surfaces by steel trowels. The plaster shall be applied in such a manner that it fully fills the gaps the thickness over the plastered surface is as specified in the description of the item.

The finished surfaces shall be smooth and true to plane, slopes or curves as required

3. HERITAGE SURFACE TEXTURES

General: Heritage surface textures are manufactured in India by M/S. Bakelite Hylam Ltd. in collaboration with M/s. UM Corporation Napan.

Heritage Granules Interiors

Composition: It consists of two components namely 92% silica particles coated with fade proof pigments and acrylic co-polymer bonding agent.

Thickness of coating: Normal thickness of the coating is 1.5 to 2.0 mm.

Substrates on which Heritage Surface Textures can be applied: Cement Mortar Asbestos boards/Sheets, Gypsum, plaster, marine plywood (min 4mm thk.) plaster board, medium density board or any other absorbent material.

PREPARATION OF SURFACE

Ensure substrate is dry.

Remove dust/dirt and scrape of old paints (by mechanical or manual means) and all loose matter on substance.

Ensure substance to be coated is eve to get good coverage.

If surface is too smooth, sand the surface before application.

Plaster and sea all cracks in the substrate. Use plaster of Paris putty for interiors and cement for exteriors.

Procedure for making trough for application:

Pour the prescribed amount of water (given in Si.No.2) into a clear plastic tub or trough. (The amount of water may be increased or decreased slightly depending on climatic conditions).

Pour one pack of bonding agent into the through.

Blend the bonding agent with water.

Pour one pack of dry material in to the trough.

Knead the material in trough with hands thoroughly.

Check for lumps in the mixture. If lumps founds, mix thoroughly again.

Allow the dough is ready is application.

Method of Application:

Take the prepared dough little at a time and apply into the surface by at towel.

Spread the material as thinly as possible (max. thickness 1.5mm) without any voids.

Finish the coating by lightly pressing with the towel.

At the end of the day, complete the job at a corner and as a straight line edge. This will ensure an even coating on continuation the next day.

Ensure that the coated area is not tampered with or exposed to rain for a minimum of two days after completion of application. This is the minimum curing period required.

Days after completion of application. This is the minimum curing period required.

Pot life of prepared dough: Use up the dough within 4 hours after preparation. To extend pot life, cover the dough with wet cloth. Keep dough in shade when not in use.

Drying time of coating:

a) Touch dry : Half an hour

b) Over working time : One hour

c) Curing time : Two days.

4. GLAZED/CERAMIC TILE DADO

Glazed/Ceramic tile dado where called for on drawings or schedule of finishes shall generally be of 200 x 300 mm size or as approved, white/colored glazed/ceramic tiles manufactured by Somany, Bell, Kajaria or approved by Architect. The tiles shall be uniform size and color. The rear face of the tiles shall be grooved and/or recessed to provide an adequate key for the plaster. The tiles shall be laid true and plumb over a cement screed 15mm thick composed of 1 part cement and 3 parts coarse sand. Before laying the tiles, the plaster shall be allowed to harden and then roughened with wire brushes. The back of the tiles shall be buttered with a coat of gray cement slurry and set in the bedding mortar. The tiles shall be firmly set in the mortar bedding and tamped and corrected to proper plane and lines. The joints shall be tight, regular, uniform and shall be as fine as possible and finished neat in pigmented horizontal to form required pattern.

After laying, the tiles shall be thoroughly washed and clean to the satisfaction of the Architect.

b. CERAMIC TILES FLOORING

Ceramic tile paving in terrace and other areas where called for shall be or non-slip ceramic tiles as Approved by Architect. The tiles shall be of approved color, size and shape and shall be laid to the pattern approved by the Architect. The tiles shall be of uniform color, true to size and shape and free from tracks, twists, uneven edges, cracking and other defects. The tiles shall be generally of size 300 x 300 mm unless otherwise called for.

The tiles shall be laid over a bed of 20mm thick cement mortar 1:3 (1 cement : 3 coarse sand) and leveled to at true surface. The surface of the bedding mortar shall be left rough to provide bond for the tiles. A floating coat of thick cement slurry shall be laid over the screed to proper levels and the tiles set over the same firmly to correct line and levels.

5. WALL FINISHES

EXTENT AND INTENT

The Vendor shall finish all materials, labor, scaffolding, tools, plant and incidentals necessary and required for the completion of all plaster and wall finishes. The Vendor shall be responsible to take proper precautions to protect already installed work from damage. Particular care shall be taken to protect windows. Tape shall be used where necessary.

Particular care shall be taken to protect windows. Tape shall be used where necessary.

GENERAL

Plaster as herein specified shall be applied to all internal surfaces where called for. Glazed tile dado, terrazzo dado and other wall finishes are to be provided where indicated on drawings and typical details shall be considered to apply to appropriate adjoining areas where shown on same drawings or not an whether indicated or not. All plaster work and other wall finishes shall be executed by skilled workmen in a workman like manner and shall be of the best workmanship and in strict accordance with the dimensions on drawings.

PLASTER WORK

The primary requirements of the plaster work shall be to provide an absolute watertight enclosures, dense, smooth, and hard and divided of cracks on the interior and exterior. The Vendor shall do all that is necessary to ensure this result. All plastering shall be finished to true plane without imperfections and square with adjoining work and shall from proper foundations for finishing materials such as paints etc.

Masonry and concrete surfaces to which plaster is to be applied shall be clean, free from efflorescence, damp and sufficiently rough and keyed. Hacking of concrete shall be 100% to ensure proper bond.

Whether directed all joints between concrete frames and masonry in-filling shall be expressed by a groove cut in the plaster. Said groove shall be 1cm lower the joint beneath.

Where groves are not called for the joints between concrete members and masonry, in-filling shall be covered by a layer of 24 gauge, 12mm size galvanized chicken wire mesh strips 400mm wide or as shown, installed before plastering.

CHASING

All chasing, installation of conduits, boxes etc. to be completed before any plastering or other wall finish is commenced on a surface. Chasing or cutting of plaster or other finish will not be permitted. Broken corners shall be cut back not less than 150mm on both sides and patched with plaster of Paris as directed. All corners shall be rounder

plaster of Paris as directed. All corners shall be rounded to a radius of 8mm or provided with suitable galvanized iron E.P.M. corner beads as directed by the Architect.

SAMPLES

Samples of each type of plaster and other wall finish shall be prepared for approval by the Architect.

PREPARATION OF SURFACE

The joints in all walls, both existing and freshly built shall be raked onto a depth of 15mm, brushed clean with wire brushes dusted and thoroughly washed before starting plaster work. Concrete surfaces shall be completely hacked upto about 6mm depth for the entire surface as approved by the Architect to endure proper key for the plaster.

INTERNAL PLASTER TO WALLS

Plaster to internal faces of walls shall be 12mm/15mm/20mm thick as called for, consisting of 1 part cement and 6 part clean sand. (Fine and Coarse sand in equal proportions).

MORTAR MIXING

Mortar shall be prepared as specified under Brick/stone work. It shall be made in small quantities only as required and applied within 15 minute of mixing.

APPLICATION

Plaster application shall be commenced only after the preparatory work is approved by the Architect. Correct thickness of plaster shall be obtained by laying plaster screed (Gauges) at intervals of 1.50 meters.

Mortar shall be firmly applied, well pressed into the joints, rubbed and finished as approved by the Architect to give smooth and even surface.

CHICKEN MESH ON WALLS

A layer of galvanized chicken mesh (24 gauge, 12mm size) shall be provided at all junctions of members and masonry walls besides other locations as called for, properly stretched and nailed, ensuring equal thickness of plaster on both side of the mesh. Chicken mesh shall be provided over the entire surface of hollow blocks wherever plaster over hollow block wall is called for.

Metal corner beads to be provided where called for on drawings and/or as instructed.

CURING

Finished plaster shall be kept wet for 10 days after completion. In hot weather, all walls shall be screened with matting kept wet or any other approved means.

CEILING PLASTER

Plaster to ceiling, soffits of stair flight slabs and similar locations where called for shall be 6mm thick and consist of 1 cement and 4 parts clean fine sand.

PREPARATION OF SURFACE

The surface to be plastered shall be prepared by a close hacking with pointed chisel as directed, to provide necessary bonding for the plaster. The surface shall be brushed, swept clean and thoroughly wetted before plastering.

APPLICATION

Mortar shall be applied firmly, pressed to the surface, rubbed and finished to a smooth and even surface.

CURING

Finished plaster shall be kept wet for 10 days after completion.

GROOVES

Where called for V Grooves of size as approved shall be formed in the dado and finished neat as directed. The grooves shall be straight, uniform width and depth and neatly formed.

METAL WORK

ALUMINUM DOORS, WINDOWS AND GLAZING

SHOP DRAWINGS

Vendor shall submit to the Architect for his approval shop drawings within 10 days of confirming opening sizes.

The drawing should be to full scale as possible, showing all items of work, including:-

Metal thickness

Arrangement of components

Jointing

Details of site connections

Fastening

Flashing

Metal finishes

Glazing

Weather stripping

Sub framing

Hardware (including preparation)

Sealant

Other pertinent information.

INSPECTION: All material brought to site by the Vendor for used in the work shall be subjected to inspection and approval by the Architect and shall be required to get necessary tests carried out on material and work from approved laboratory/test house, the cost of which shall be borne by the Vendor.

All care shall be taken to ensure surface protection during transportation, storage at site and installation. The tape protection shall be removed on installation.

GLAZING: Glazing shall comprise of reflecting bronze or approved shade tinted 6mm - 8mm thick toughened float glass, all glass panels shall be retained within aluminum framing by used of exterior grade Ethyl Propylene Di Methaline (EPDM) gasket. No water leakage or penetration shall occur when subjected to continuous steady water shower as per BS 4315 and DIN 18055 withstanding water sprays at the rate of 5 gallon per hour sft. of fixed glass area and static pressure of 20% design wind load or 15 PSI whichever is greater. The complete installation shall be free from vibration, wind whistle and noise due to thermal and structural movement and wind pressure.

PRECAUTIONS: Vendor shall ensure that aluminum curtain walls are not deformed/damaged during subsequent construction. All fittings, hinges and frame works etc. shall be protected within alkathene sheets, so that these may not be damaged during execution of work.

FITTINGS:

The Vendor shall fix aluminum doors, windows etc. in prepared opening. Aluminum door frames, wherever possible, shall be fixed in place before erecting partitions. Where this is not possible, prepared opening shall be left for hold fasts. Breaking of partitions or walls for inserting hold fasts will not be permitted. Where the frames are to be fixed to column/wall faces they shall be fixed with rawl bolts/expansions bolts of approved make in approved manner. Special concrete blocks with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm size) with 3mm thick M.S. plate 100 x 100mm shall be cast set at suitable places into the jambs of openings. Door and windows frames shall be welded to the blocks with spaces in approved manner.

The Vendor shall be responsible for assembling composites, bedding and pointing with mastic inside and outside at the mullions and transoms, fixing lugs to the frames,

placing the doors/windows in their respective opening and bedding with mastic. The Vendor shall be responsible for all builders work including cutting out and making good, forming fixing holes for inserting loose lugs, bolts and clips and for stacking of window, doors adjacent to the opening for necessary hoisting. The Vendor shall be responsible for the doors and windows being set straight, plumb and level and for their satisfactory operation after the fixing is complete.

MANUFACTURER'S ATTENDANCE

The manufacturer immediately prior to the commencement of glazing, shall adjust and set all windows and doors and accept responsibility for satisfactory working of the opening frames. The Vendor shall give three days clear notice to the manufacturer that glazing will commence.

The gaps between frames and supports and also any gaps in the door and window section

shall be raked out as directed and filled with silicon approved color and make to ensure complete water tightness.

CARPENTRY AND JOINERY

EXTENT & INTENT

It is the intent of this specification to include all carpentry and joinery work in connection with doors, windows, glazing, partitions, ceilings, paneling, cabinets and other items of wood work called for in the drawings.

GENERAL

The carpentry and joinery work shall include the finishing of all labor, materials, equipment, incidentals and appliances required to complete the work including the supervision and installation of fastening devices and hardware in accordance with the drawings and the attached hardware schedule.

7.1 TIMBER

General: Specified variety of timber shall be used in the work. The timber shall be sawn in the direction of grains. The sawing shall be truly straight and square.

Timber generally is to be the best of kind, well and properly seasoned, of nature growth, free from worm holes, large loose or dead knots or other defeats and sawn i.e., squarely and will not suffer warping, splitting or other defects through improper handling.

The hardwood is to be well seasoned, Hollock or other approved similar locally obtainable hardwood weighing is to be well seasoned Hollock 610kg/cum (12% moisture content with a maximum moisture content of 20%).

Teak wood would be of best quality from Dandeli, Balarshsh, free from soft heart, worn holes and weighting 640kgs/cum (Avg. wt. With a moisture content of 12%).

The moisture contents in wood shall be as per the CPWD Specification 1977. The testing of wood shall be carried out as per CPWD Specification 1977.

All rubber wood shall be free from worm holes, soft sap or knots. The wood shall be well seasoned as per IS:287:1973 with a moisture content of 10%, called BOROTIK, manufactured by Borox Morarji Ltd.

Kail wood shall be of good quality, well seasoned free from defects such as dead knots, cracks, sapwood etc. No individual hard and sound knot shall exceed 6Sq.cm. In size and the aggregate area shall be more than 1% of the pieces. These shall not be less than 2 growth rings per cm. width in cross-section.

8. BLOCK BOARD

The Block board to be used shall be grade, i.e., exterior grade of commercial type (X-com) which shall have both faces of commercial plywood veneer. The Block board shall be solid core, phenol formaldehyde resin bonded of approved make. The core shall be made of strips of wood each not exceeding 25 mm in width joined together. Sandwiched and glued between two or more outer veneers with the direction of the grains of the core block running at right angle to that of adjacent veneers.

The Block board to be used in the said work shall be grade I, Exterior grade of commercial type (X-com) which shall be both faces of commercial plywood veneers.

9. PARTICLE BOARD

Particle board manufactured from particles of T.W./ Hardwood, for example flakes, granules, shavings, servers, splinters in agglomerated formed and pressed together by use of an organic binder together with one or of the agents such as heat, pressure, moisture, a catalyst etc. Particle board used for partitioning of paneling shall be of FPTH (flat pressed three layered board type). It shall be bounded with BWR (Boiling Water Proof) type synthetic resin adhesive. The shrinkage in thickness and length of the particle board shall not exceed 5%.

10. PLYWOOD

Plywood to be used shall be grade BWR, i.e., it shall have bounded with BWR (Boiling Water Proof) type synthetic resin adhesive shall be equal or superior quality that is laid down in IS: 303-1960.

The veneers for all grades shall be either rotary cut or sliced. The Veneers shall be sufficiently smooth to permit even spread of glue. The thickness of all veneers shall be uniform, within a tolerance 5%, corresponding veneers on either side of center one shall be of the same thickness and species. The requirement of thickness of the face and core veneers shall be as follows:

In 3 ply board up to 5 mm thick, the combined thickness of the face veneers shall not exceed twice the thickness of the center ply.

In a multiply boards, the thickness of any veneers shall not more than thrice the thickness of any other veneers.

The sum of the thickness of the veneers in one direction shall approx. To the sum of the thickness of the veneers at right angles to them and shall not be greater than 1-5 times this sum except for 3-ply as specified in (a).

FLUSH DOORS

All flush doors shall be solid core type with well-seasoned block board core. The entire bonding shall be in highly water resistant type liquid phenol Formaldehyde Synthetic Resin Adhesives of the hot pressed type. Rubber wood 12 mm thick lapping all rounds had to be provide and should be included in the rates. Both the faces shall be commercial hardwood type ready for lamination or painting.

12 ADHESIVES

Adhesive shall be Phenol Formaldehyde Synthetic resin conforming to B.W.P. (Boiling Water Proof) type specified in IS:848-1974. Only synthetic resin adhesive shall be used for bonding cores members to one another, including core frame, and for lapping, glazing frame, venetian frame and other exposed parts where such binding is done.

13 NAILS, SPIKES, SCREWS & BOLTS

Nails, spikes and bolts shall be of the best quality mild steel or length and of length and weight approved by the Architect. Nails shall comply with IS: 1959 -1960 or equivalent approved quality samples. Brass headed mails are to comply with B.S.1210. Wire staplers shall comply with B.S.1494 or equivalent.

ROUGH CARPENTRY

Materials unless otherwise called for, all framing and other concealed wood members shall be of first class Burma teakwood and shall be seasoned to a moisture content of

not less than 10% or more than 15%. Wood of greater moisture content shall be used in any part of the structure.

WORKMANSHIP

All carpenter's work shall be done by skilled workmen using proper tools. All joints shall as far as possible, be mortised and tenoned and glued with best quality approved waterproof glue. Where mortise tenon joints are not possible, the joints shall be securely nailed with the longest nails that may be used without splitting the wood. Whenever it is necessary or adequate joints cannot be formed by nailing, the members shall be lapped or jointed by GI straps or extra wood blocks. All joints shall be done with neatness and as approved and directed by the Architect.

14. PARTITIONS AND CABINET WORK-

General: Partitions, cabinets, etc. shall be fabricated and workshop as far as practicable and then brought inside the building ready to set in place. The various members shall be worked in the best manner known to the trade, mortised and tenoned, doweled, blocked and glued together so as to avoid the use of nails as far as possible. The details shall be closely followed, moulding clearly cut and miters accurately made. Free edge of shutters, Shelves, partitions, sides etc. shall be provided with first class teakwood edging, glued and nailed in approved manner. Shelves, where shown fixed, shall be supported on aluminum or other cleats or in other manner as approved by the Architect. Adjustable shelves shall brass sockets and pins as detailed on drawings. Drawer bottoms shall be of 6 mm commercial ply, unless otherwise show. Drawer front, sides and back shall be first class teakwood. The drawers shall slide on wooden bearers as shown on drawings.

Timber skirting where called for shall be of first class Burma teakwood, cut to required sizes, Planed smooth on visible faces and fixed in position in approved manner. Cut-outs, opening, etc. shall be provided in the counters and cabinets to accommodate sinks, wash basins, cooking, ranges, pipes, etc. as shown on drawings as required at site.

PRESERVATIVE TREATMENT

All wood work in contract with masonry shall be painted with approved asphalt or anti termite & fire retardant coating (Viper or equivalent) before placing. Care shall be taken to keep exposed surfaces clear from tat etc. felt shall be used to isolated wood from masonry wherever practicable. All concealed wood etc. shall be treated fully and liberally with so lignum before placing in position.

PAINTING AND POLISHING

All exposed teak faces of partitions, glazing, doors, cabinet work etc. shall be Duco painted polished to approved finish. Door shutters, internal faces of cupboards and cabinets etc. shall be enamel painted/oiled to approved finish. Drawer bottoms, sides of drawers, etc. shall be carried out as specified under “painting”.

PROTECTION OF WORK

The Vendor shall be responsible for the temporary doors and closing in opening necessary for the protection of the work during progress. He shall also provide and maintain any other temporary covering required for the protection of finished wood work that may damaged during the progress of the work is left unprotected.

15. GLASS AND GLAZING

EXTENT AND INTENT

The Vendor shall furnish all materials, labor, tools, appliances, equipment and incidentals required to complete the installation of all glass and related items.

GENERAL

All glass shall be of the type, quality and substance specified. All glass shall be first class in every respect shall confirm to IS : 1761-1960. The glass shall be reasonably free from blisters, stains scratches and bubbles so as not disturb the visibility through the glass.

GLASS SIZES

The Vendor shall cut glass sizes by field measurement or dimensionally approved shop drawings. The responsibility for correct glass sizes shall rest with the Vendor. No cracked, chipped or disfigured glass shall be accepted.

GLASS BREAKAGE

The Vendor shall replace all broken, damaged and disfigured glass caused in executing the work or by faulty installation, before acceptance of the building, without cost to the owner.

MATERIALS

Glass for all glazing work shall be plain sheet as called for in the drawing and schedules. Sheet Glass for Windows shall be mm/5.5 mm thick special selected quality glass as called for, manufactured by M/s. Hindustan Safety Glass works or M/s. Actual Glass Works to the best standards available.

PREPARATION OF FRAMES AND GLASS

Before installation the Vendor shall ensure that:

All glazing rebates are square, plumb and true in plane, clear, dry and dust free;

All frame adjustments are made prior to glazing;

All glass edges are clean cut to exact sizes, allowing expansion tolerance as recommended by the glass manufacturer;

All sashes shall be glazed in the closed position and shall not be opened until the compound is set;

All materials are used in strict accordance with the manufacture's instruction;

Glass shall not be forced into place;

INSTALLATION

The glass shall be set on neoprene or EPDM glazing blocks on all side (at least two per side) as directed. Glass shall be bedded back and face glazed and so installed as to achieve a completely water tight and rattle-free installation. The obscure glass where called for shall be set with smooth surface outside.

COMPLETION

Upon the completion of the work all glass shall be thoroughly cleaned, paint or other marks removed. Any cracked, scratched, chipped or other defective false shall be removed and replaced without cost to owner. Any loose glass shall be set to the satisfaction of the Architect.

16. HARDWARE

EXTENT AND INTENT

The intention of the contract is that, that the building as shown shall be completely equipped with required hardware. Any required item not noted or listed shall be finished in a grade equal to and in harmony with similar item listed.

GENERAL

All hard ware shall be of the best quality of its type and strictly in conformity with the materials and finish described in schedule of hardware. If called upon to do so, the Vendor shall arrange to get hardware specially manufactured to the design, requirements and standards laid down by the Architect.

SAMPLES

Samples of each different item of hardware including screws or any particular item of hardware shall be submitted to the Architect for approval.

QUALITY

All hardware shall be of perfect fit, uniform in finish and free from imperfections that affect serviceability or mar the appearance.

GUARANTEE

The Vendor shall be responsible for the proper working of all hardware, for a period of one year from the date of completion of acceptance of the building.

17. PAINTING

EXTENT AND INTENT

The Vendor shall supply all materials, labor, tools, ladders, scaffolding and other equipment necessary for the completion and protection of all painting work. Painting, as herein specified shall be applied to all surfaces requiring painting throughout the interior and exterior of the building as given in the schedules of finishes or elsewhere. The painting shall be carried out by a specialized sub-Vendor, approved by the Architect. Care is to be taken that all surfaces to be painted are thoroughly cleaned and dry.

MATERIALS

Materials used in the work shall be of manufacture approved by the Architect. Ready mixed paints, varnishes, Enamels, lacquers, stains, paste fillers, distempers and other materials must be delivered to the job site in the original containers, with the seals unbroken and labels intact. Each container shall give the manufacture's name, type of paint, colour of paint and instructions for reducing the thinning shall be done only in accordance with directions. Remove rejected materials immediately from the premises.

COLOR

All colours, as provide in the colour schedule shall be approved by the Architect. The Vendor shall mix manufacture's colours as per Architect's requirements and shall prepare painted samples of the colours selected and submit same for approval by the Architect. No work is to proceed until the Architect has given his approval, preferably in writing of colour samples.

COMMENCEMENT OF WORK

Painting shall not be started until the surfaces to be painted are in a condition fit to receive painting and so certified by the Architect.

Painting work shall be taken in hand only after all other Vendor's work is completed.

Building where painting work is to be commenced shall be thoroughly swept and cleaned up before commencement of painting.

Other materials of colors sharp and clean, without overlapping.

18 . ENAMEL PAINT

Wood or Plastered Surface: Pigmented priming coat followed by one undercoat and two more finishing coat of enamel paint. Paste filler to be applied after every coat excepting the final finishing coat and sanded.

Non-Galvanized Steel Surfaces: Coat of zinc chromate's oxide primer after phosphating followed by the three or more coats of synthetic enamel paint. Paste filler to be applied after every coat excepting final finishing coat and sanded.

Galvanized Steel Surfaces: Priming coat of galvanized metal primer after washing with galvanized metal cleaner, followed by three or more coats of synthetic enamel paint. Paste filler to be applied after every coat except final finishing coat and sanded.

19. PLASTIC EMULSION PAINT

Pigmented priming coat (emulsion thinned with water) followed by three or more coats of plastic paint. Paste filler to be applied after every coat excepting the final finishing coat and sanded.

OIL BOND DISTEMPER

Pigmented primer (cement primer) coat followed by three or more finishing coats of oil bond distemper. Paste filler to be applied after every coat excepting the final finishing coat and sanded.

OILING

Three coats of linseed oil (confirming to IS:75-1950) applied with brushes. Each coat to be applied after the previous coat is thoroughly dried. Granite to be filled with approved powder and surface rubbed and smooth before oiling.

20. SPIRIT POLISHING

Polish: Polishing material shall be prepared by dissolving pure shellac, varying in shade from pale orange to lemon yellow, free from direct and other materials, in methylated sprit at the rate of 0.15Kg. shellac to 1 liter of spirit. Suitable pigment to achieve the required shade of polish shall be added as directed by the Architect.

Preparation of Surface: The surface cleaned of all dirt etc. shall be rubbed down smooth with sand paper and well dusted. Knots of visible shall be covered with a preparation of red lead and glue size laid on while hot. Holes and indentations shall be given a coat of wood filler made by mixing whiting (ground chalk) in methylated sprit at the rate of 1.5 kg. of whiting to one liter of sprit. The surface shall again be rubbed down perfectly smooth with fine sand paper and wiped clean.

Application: There or more coats of polish shall be applied over the above surface, to achieve a finish as approved by the Architect. The polish shall be applied with a pad of

wooden cloth covered by a fine cloth. The paid moistened with polish shall be rubbed had on the wood surface in a series of overlapping movements, applying the material uniformly over the entire area to give an even finish. Subsequent coats shall be applied in similar manner after the previous coat is allowed to dry. The finishing shall be done with fresh price of clean fine cloth, damped with methylated sprit and applied by light rubbing. The finished surface shall have a uniform texture and high gloss.

21. WAX POLISHING

Wax polishing shall be done with ready made wax polish of approved brand and manufacturer.

Preparation of Surface: The surface to be polished shall have been finished smooth. Knots, cracks and holes on the surface shall be cleaned and filled with wood putty (fine saw dust mixed with bees wax). The filling when dry shall be rubbed down with a carpenters file and then the entire surface shall be rubbed down perfectly smooth and wiped clean. In no case shall sand papers be rubbed across the grains so that even fine marks are not seen on the surface.

Application: The polish shall be applied evenly with a clean soft pad of cotton cloth in surface is completely and fully covered. The surface is then continuously rubbed till the surface is quite dry. A second and third coat shall be applied in the same manner and rubbed continuously until the surface is dry.

The final coat shall then be applied and rubbed until the surface has assumed a uniform gloss and is dry, showing no sign of stickiness. The finished surface shall have a uniform glossy finish as approved by the Architect.

22. FIRE RESISTANT COATINGS ON WOOD WORK

General: The paints and primers to be used should be as per IS. 12777-1989 and BS:476 Part-7.

Application:

Primer coat: The wood surface is to be sand papered two coats of primer equivalent or Viper FR-880 (A-2) is to be applied on it with brush with a time interval of 3-4 hours.

Finishing coat: Primer coated wood is to be applied with 2 coats of sealant coating equivalent to Viper

FR-944 (fear) or Viper FRS-881 with brush with a time interval of 4-6 hours.

Finishing coat as aforesaid also could be applied directly on the previously painted/polished surfaces without removing the existing paint.

Thinner: Thinning agent if required could be used equivalent to ‘Viper’ Setter WP-914(2:1 ratio) for primer and setter WP-914(5:1 ratio) for finishing coat paint/polish.

SPECIAL NOTES

All laminate shall be 1.0mm th. on vertical surfaces & 1.5mm th. on horizontal surfaces unless otherwise specified.

All hardware like multipurpose locks, hinges, handles, magnetic catches etc. shall be used only after written approval of samples.

Rates of all furniture items including three coats of synthetic enamel paint/sprit polish etc. as specified in the BOQ.

Each cabinet shall be powder coated handle, Godrej, lock/spring loaded hinges brass ball catches and shutter to be fixed using hinges of approval quality.

Where ever not specified all exposed surfaces of partition and other wood work shall be finished with three coats of synthetic enamel paint/polish in natural shade as applicable. Nothing extra shall be paid for the same.

GENERAL SPECIFICATIONS FOR ELECTRICAL WORK

1 GENERAL

1.1 The entire electrification work shall be carried out by licensed Electrical Vendors in accordance with these specifications without any extra cost.

1.2 For site supervision the Vendor must depute a qualified electrical engineer. The Vendor shall employ only experienced and licensed wiremen to do the electrification work.

1.3 The work shall conform to relevant Indian Standard Specifications the I.E. Acts and Rules and the requirements of Local Electrical Authority.

1.4 When the installation is complete, the same shall be tested with the 500 /1000 volts Megger in the presence of the Architect / Consultant and the results shall be entered into the test certificate as per the format available with Local Electrical Authority.

1.5 Vendor shall submit to the Company 3 sets of test certificates for the installation.

1.6 The Vendor shall carry out all civil works connected with the electrical job. The Vendor shall repair and make good the damages caused by him to the civil structure while executing the electrification work. The foundations for the panel board and for the poles, grouting of frames in the wall, erection of D.B./switchboards in the wall/chasing the walls for embedding the conduits and boxes etc. are all to be carried out by the Vendor including making good the damaged civil work.

1.7 The Vendor has to submit shop drawings for the Electrical Distribution Boards and the conduit layout to the Architect/Consultants for their approval before starting the work. Also one set of approved sample of the materials have to be kept at site.

1.8 The Architect/Consultant will issue the drawings to the Vendor for carrying out the work.

1.9 The Electrical Vendor, his wiremen and supervisors shall be qualified and have a valid license while quoting as well as during the course of work.

1.10 Statutory Approval

The electrical Vendor shall obtain the approval for the electrical works carried out by the Vendor ie. Electrical panels, substation works, earthing and internal electrification as required.

2.0 SCOPE OF WORK

The scope of work shall be generally as given in the schedule of items and as mentioned below :-

A. Supply, Installation, Testing and Commissioning of the following:

i. All Electrical Panel & Distribution Boards

ii. All Mains and Sub-Main wiring/cabling between various Distribution Boards.

iii. All Circuit and sub-circuit wiring for lights, light and power outlets, Air Conditioning and Exhaust fans in False Ceiling/wooden partition walls/floor/columns/Brick/stone or concrete walls/MS Channels.

iv. Earthing System for the entire Electrical Installation.

v. Conducting and wiring for Computer & Telephone System in False Ceiling/wooden partition walls/floor/columns/Brick/stone or concrete walls/M.S. Channel.

vi. All types of lighting fixtures, Ceiling fans and Exhaust fans.

Music System.
Providing floor channels and Junction Boxes for drawing data cabling and power wiring for work stations.
Installation of substation equipments
Substation Equipment Layout etc.

X Getting the approval from the electrical inspector for the works carried by the Vendor

B) Testing and commissioning of the entire Electrical Installation including Telephone system.

The Vendor shall carry out and complete the work under this contract in every respect in confirming with the current rules and regulations of the local Electricity Authority, stipulations of the Indian Standard Institution, and with the directions of and to the satisfaction of the owner. The Vendor shall furnish all labour, material, appliances, equipment, transportation and incidentals necessary for providing, installing, testing and commissioning of the whole electrical installation as specified herein and shown on drawings.

This also includes any materials, appliances, equipment and incidental work not specifically mentioned herein or noted on the drawings/documents as being furnished or installed but which are customary to make the installation in working order. The work shall include all incidentals and jobs connected with Electrical installation such as earthing work and cutting chases/holes and making good the same and grouting etc.
NOTES
1. All items of work under the contract shall be executed strictly in accordance with the description of the item in the Schedule of Quantities, relevant drawings and Specifications read in conjunction with the appropriate Indian Standard Specifications, Indian Electricity rules as amended up to date and Conditions of Contract.
2. The rate for each item of work included in the Schedule of Quantities shall unless expressly stated otherwise, includes cost of:

a. All materials, fixing materials, accessories, operations, appliances, tools, plant, equipment, transport, labour and incidentals required in preparation for, in the full and

entire execution and completion of the work called for in the item and as per specifications and drawings completely.

b. Wastage on materials and labour.

c. Loading, transporting, unloading, handling/double handling, hoisting to all levels, setting, fitting and fixing in position, protecting, disposal of debris and all other labour necessary in and for the full and entire execution and to fully complete the job in accordance with contract documents, good practice and recognized principles.

d. Liabilities, obligations and risks arising out of conditions of contract.

e. In the event of conflict between schedule of quantities and other documents including the specifications, the most stringent shall apply and the interpretation of the Architect shall be final and binding.

3. The Vendor shall be paid for the actual quantity of work executed by him in accordance with the drawings at the contract rates.

4. All errors in totaling the amount column and in carrying forward totals shall be corrected.

5. Unless otherwise stated all measurements shall be taken in accordance with Indian Standard Electrical Installation in building Method of Measurement IS 5908 latest revisions/ additions.

6. Necessary liaison shall be done by the Vendor with the local authority for obtaining temporary and permanent electrical connection and installation of all meters etc. The Vendor shall submit and prepare all test reports and other documents to the local authorities in consultation and on behalf of the Company.

7. On the completion of the work the Vendor shall submit to the Company layout Drawings indicating the complete Electrical Installation as installed. These Drawings shall in particular give the following information.

i. Run and size of conduit, location of inspection/outlet boxes.

ii. Number and size of wires in each conduit.

iii. Location of switches, outlets, DBs, Telephone, Call Bell and Music outlets etc.

iv. Layout and particulars of mains and sub-mains and cable route etc.

v. Schematic diagrams for the complete Electrical System.

vi. Complete Earthing System with size of earthing conductors.

Layout and particulars of the Telephone and Computer system.

Substation Equipments Layout.

Shop drawing for all system shall be prepared by the Vendor & got approved before starting of the work.

TECHNICAL SPECIFICATIONS

1 SPECIFICATIONS FOR INTERNAL WIRING

1.1. SYSTEM OF WIRING:

The system of wiring shall consist of single/multi core PVC insulated FRLS copper conductor wires in non-metallic PVC conduits/ metallic M.S. conduits as called for in the BOQ. All conduits shall be on the surface, (supported from the Ceiling), in the False Ceiling and concealed in other areas where RCC slab is provided unless otherwise called for in the drawings. All down conduits shall be concealed unless otherwise called for.

1.2. GENERAL

Prior to laying of conduits, the Vendor shall get approved the conduit layout indicating the route of conduit, number and size of conduits, location of junction/ inspection/pull boxes, size and location of switch boxes, point outlet boxes and other details. These conduit layouts shall be got approved by the Consultant and then only conduit layout should be started. Any modification or suggestions shall be approved by the Consultant before the laying of conduits.

1.3. MATERIALS:

M.S. conduits shall conform to Indian Standards IS: 1653 - 1964 -Specification for Rigid Steel conduits for Electrical wiring with the latest amendments.

M.S. CONDUITS:

M.S. conduits shall be solid drawn or lap welded conduits. Stove enameled inside and outside with minimum wall thickness of 1.6 mm for conduits upto 25 mm diameter and 2.0 mm wall thickness for conduits 32 mm diameter and above.

PVC conduits to be used for concealed work for all systems except Fire Alarm & Computer system where M.S. conduits shall be used. PVC conduits shall conform to

Indian Standards IS: 9537(Part-3)-1983 -Specification for conduits for Electrical Installation (Part-I) General Requirements.

PVC CONDUITS:

PVC conduits shall be rigid, unplasticised, heavy gauge having 1.8 mm wall thickness upto 20 mm diameter and 2.0 mm wall thickness for all sizes above 20 mm diameter. Minimum size of conduit shall be 20 mm dia. Minimum size of conduit for Power point wiring shall be 25 mm dia. The conduits shall be delivered to the site of construction in original bundles and each length of conduit shall bear the label of the manufacturer. The numbers of insulated copper wires that may be drawn into the conduits of various sizes are given below and the fill shall not exceed 40% the maximum permissible number of 650/1100 volts grade single/multi core PVC insulated copper conductor wires of different sizes that may be drawn into rigid metallic or non-metallic conduits.

SIZE OF WIRE	SIZE OF CONDUITS (MM)				
Nominal cross-Sectional area of wires in sq. mm	20	25	32	40	50 nominal dia in mm
	(Maximum number of wires)				
1.5	5	6	18	-	-
2.5	3	4	10	-	-
4.0	2	4	5	10	-
6.0	-	6	6	8	-
10.0	-	-	3	4	-
16.0	-	-	-	3	5
25.0	-	-	-	2	3

1.4 PVC CONDUIT ACCESSORIES & CONNECTIONS:

The accessories used for PVC conduits shall conform to Indian Standards IS: 3419-1988-(Specification for fittings for non-metallic conduits).PVC conduits shall be joined by means of screwed or plain couplers. Where there are long runs of straight conduits, inspection boxes shall be provided at intervals as approved by the consultant. The threads of the pipe and sockets shall be free from grease and oil. It shall be thoroughly cleaned before making the screwed/plain joints. Proper jointing materials as recommended by manufacturers shall be used for jointing of PVC pipes. Use PVC couplers and connectors for PVC pipe connections and terminations in boxes. All the joints shall be fully water tight. Junction boxes and running joints shall be provided at suitable places to allow for subsequent extensions if any, without undue dismantling of conduit system. As far as possible the diagonal run of conduits shall be avoided. Junction between conduit and adapter boxes, back outlet boxes, switch boxes and the like must be provided with entry spouts and smooth PVC bushes. Joints between conduit and iron clad Distribution Boards or control gear shall be effected by means of conduit couplers into each of which will be coupled smooth PVC bush from the inside of box or case. Conduit system shall be erect and straight as far as possible. All jointing methods shall be subject to the approval of the consultant.

BENDS IN CONDUITS:

Where necessary bends or diversions may be achieved by means of bends and or circular inspection boxes with adequate and suitable inlet and outlet screwed joints. In case of recessed system each junction box shall be provided with a cover properly secured and flush with the finished wall surface, so that the conductors inside the conduits are easily accessible. No bend shall have a radius of less than 2.5 times the outside diameter of the conduit. Conduits shall be cold bend by means of a Bending spring available with the manufacturers. In case it is not available then Heat may be used to soften the PVC conduits, by filling sand in the pipe. Use of PVC conduit in places where ambient temperature is 60 degrees or above is prohibited. PVC Solvent shall be used for joints between conduits, conduits & Junction box etc. PVC checknuts and bushes shall be used for joining conduit with outlet boxes. PVC Closures shall be provided on unused mouths of Junction boxes.

Separate conduits shall be provided for the following system.

i) Lights, Ceiling fans, Exhaust fans & 5A Light sockets.
ii) Power sockets & A/C outlets
iii) Telephone System
iv) Television, Computer & Music system
v) Emergency System.
vi) Public Address System
vii) Fire Alarm System.

Separate switchboards/outlets shall be provided for the following system.

i) Lights, Ceiling fans, Exhaust fans & 5A Light sockets.
ii) Power sockets & A/C outlets
iii) Telephone System
iv) Television, Computer & Music system
v) Emergency System.
vi) Public Address System
vii) Fire Alarm system.

1.5 FIXING CONDUITS:

Conduits and junction boxes shall be kept in position and proper holdfasts shall be provided. Conduits shall be so arranged as to facilitate easy drawing of wires through them. Adequate junction boxes of approved shape and size shall be provided. All conduits shall be installed so as to avoid steam and hot water pipes. After the conduits, junction boxes, outlet boxes & switch boxes are installed in position their outlets shall be properly plugged so that water, mortar, insects or any other foreign matter does not enter into the conduit system. Exposed conduits shall be fixed by means of spacer bar/ saddles at intervals of not more than 600 mm in normal run and 500 mm from both sides of fitting or accessories. The saddles shall be of 3 mm x 19 mm mild steel flat, properly treated with primer and painted, securely fixed to support by means of nuts and bolts/rawl bolts and MS screws as required.

Conduits shall be laid in a neat and organized manner as directed and approved by the Consultant. Conduit runs shall be planned so as not to conflict with any other service pipe lines/ducts.

Where exposed conduits are suspended from the structure they shall be clamped firmly and rigidly to hangers of design to be approved by the Architect. Where hangers are to be anchored to reinforced concrete appropriate inserts and necessary devices for their fixing shall be provided at the time of fixing. Making holes or openings in the concrete will generally not be allowed. In case it is unavoidable prior permission of the Consultant shall be obtained. Conduits shall be fixed in the chase by means of staples not more than 600 mm apart and the chase filled with cement mortar 1: 4. Cutting of horizontal chases in walls is prohibited.

1.6. PROTECTION

To minimize condensation or sweating inside the conduit pipes all outlets of conduit system shall be adequately ventilated as directed and approved by the Consultant. All screwed and socketed connections shall be adequately made fully water tight by the use of proper jointing materials i.e. Tropolin for PVC conduits & white lead for metal conduits.

1.7. SWITCH-OUTLET BOXES AND JUNCTION BOXES

All boxes shall conform to Indian Standards IS: 5133(Part-1)-1969 (Specification for boxes for enclosure of Electrical accessories) with the latest amendments. All outlet boxes for switches, sockets & other receptacles shall be fabricated from 1.6mm thick mild steel sheets duly painted with rust proof paint (zinc passivated) as called for, having smooth external & internal surfaces to true finish. Junction boxes and outlet boxes in contact with earth or installed in areas exposed to the weather shall be of 2mm thick mild steel and painted. Where called for, outlet boxes for receiving switches, telephone outlets T.V. outlets, power plugs etc. shall be fabricated to prove shape and size to suit the cover plates of approved make for different utilities. The cover plates shall be of best quality Hylam sheets or ISI grade Urea Formaldehyde

Thermosetting insulating material which shall be both mechanically strong and fire retardant, as approved by the Consultant. Proper supports shall be provided in the outlet boxes to fix the cover plates of switches as required. Separate screwed earth terminal shall be provided inside the box for earthing purpose. All boxes shall have adequate number of knockout holes of required diameter for conduit entry. Where called for outlet boxes for receiving switches and fan regulators in one box, shall be fabricated to approved shape and size to accommodate fan regulators and switches to be fixed on grid plates. These boxes shall be covered with Hylam sheets or ISI grade Urea Formaldehyde Thermosetting insulating material which shall be both mechanically strong and fire retardant. All junction boxes, pull boxes and outlet boxes shall be provided with sheet cover Urea Formaldehyde Thermosetting insulating material. The box cover shall be secured to the box with adequate number of round head brass screws of approved make. Outlets exposed to the weather shall be fully weather tight, complete with rubber gasketed covers, glass where used shall be fully heat resistant for the duty. The outlet boxes shall be painted with two coats of bit mastic paint before they are fixed in position. All Outlet boxes fixed in concrete/recessed in wall shall be of a minimum depth of 55mm.

1.8. INSPECTION BOXES

Rust proof (Zinc passivated) inspection boxes of 1.6mm thick mild steel sheet and of required size, having smoothed external and internal finish shall be provided to permit periodical inspection and to facilitate removal and replacement of wires when required. Inspection boxes shall be mounted flush with ceiling/walls finished surface and shall be provided with screwed covers of Urea Formaldehyde Thermosetting insulating material sheet cover secured to the box with brass screws. Adequate holes shall be provided for ventilation in the inspection box covers.

1.9. TELEPHONE SYSTEM

Conduits, junction boxes, draw boxes, outlet boxes and covers to boxes for telephone system shall be as described under relevant clauses elsewhere in these specifications. Conduits for telephone system shall be at least 150 mm away from the electrical conduits. The conduits for telephone wiring shall be of specified size and

shall be terminated at outlets as indicated on the drawings. Telephone system conduits shall have 2 mm diameter galvanized steel pull wires installed. Necessary Junction boxes to be provided for easy drawing of the Telephone wires from each unit to the Telephone Tag Box and from the Tag Box to the open ground.

1.10. T.V. & COMPUTER SYSTEM

Conduits junction boxes, draw boxes, outlet boxes and covers to boxes for T.V. & Computer system shall be as described under relevant clauses elsewhere in these specifications. Conduits for T.V. & Computer system shall be at least 150mm away from the electrical conduits. The conduits for T.V. & Computer wiring shall be of specified size and shall be terminated at outlets as indicated on the drawings. T.V. & Computer system conduits shall have 2mm diameter galvanized steel pull wires installed. Necessary Junction boxes to be provided for easy drawing of the Television & Computer wires from each unit to the Junction Box and from the Junction Box to the open ground.

On the completion of the work the Vendor shall submit to the Owner layout Drawings indicating the complete Electrical Installation as installed. These Drawings shall in particular give the following information.

i. Run and size of conduit, location of inspection/outlet boxes etc.

ii. Number and size of wires in each conduit.

iii. Location of switches, outlets, all types of DBs, Telephone, Television, Computer, Call Bell & Public Address points, Light sockets, Power sockets, Fire Alarm points, etc.

iv. Layout and particulars of mains and sub-mains and cable route etc.

v. Schematic diagrams for the complete Electrical System.

vi. Layout of Complete Earthing System with size of Earthing conductors.

vii. Layout and particulars of the Telephone, Public Address, Television, Computer.

1.11. CONDUCTORS

PVC insulated multistoried copper conductor wires of 1100 Volts grade shall be used for three phase distribution and PVC insulated multistoried copper conductor

wires of 1100 V grade shall also be used for Single phase distribution and shall conform to IS: 694 -1964 with the latest amendments and shall be ISI marked.

1.12. BUNCHING OF WIRES

Wires carrying current shall be so bunched in the conduit that the outgoing and return wires are drawn into the same conduit. Wires originating from two different phases shall not be run in the same conduit.

1.13. DRAWING OF CONDUCTORS

The drawing and jointing of copper conductor wires shall be executed with due regard to the following precautions, while drawing insulated wires into the conduits. Care shall be taken to avoid scratches and kinks which cause breakage of conductors. There shall be no sharp bends.

Insulation shall be shaved off for a length of 15mm at the end of wire like sharpening of a pencil and it shall not be removed by cutting it square or ringing.

PVC insulated copper conductor wire ends before connection shall be properly soldered (at least 15mm length) with special Cu solder for copper conductor or shall be properly crimped with copper lugs/sockets as the case may be. Strands of wires shall not be out for connecting to the terminals. All strands of wires shall be soldered at the end before connection. The connecting brass-screws shall have flat ends. All looped joints shall be soldered and connected through terminal block/connectors. The pressure applied to tighten terminal screws shall be just adequate, neither too much nor too less. Conductors having nominal cross sectional area exceeding 6 Sq mm shall always be provided with cable sockets.

At all bolted terminals, brass flat washer of large area and approved steel spring washers shall be used. Brass nuts and bolts shall be used for all connections.

Only certified wiremen and cable jointers shall be employed to do jointing work. All wire shall bear the manufacturer’s label and the voltage grade at one meter intervals for the full length of coil, and shall be brought to site in new and original packages.

The sub-circuit wiring for points shall be carried out in looping system and no joint shall be allowed in the length of the conductors. No wire shall be drawn into any conduit, until all work of any nature, that may cause injury to wire is completed. Care shall be taken in pulling the wires so that no damage occurs to the insulation of the wire. Before the wires are drawn into the conduits the conduits shall be thoroughly cleared of moisture, dust, and dirt or any other obstruction by Drawing dry cloth through the conduits. The minimum size of PVC insulated stranded copper conductor wire for all sub circuit wiring for lights, exhaust fans, ceiling fan and 5A Light sockets points shall be 1.5 Sq mm. In case of power circuit not more than two 15 Amp power outlets shall be grouped in one circuit, wiring for the first power outlet shall be carried out with PVC insulated 6.0 sq mm copper conductor wires. Wiring for the second power outlet shall be carried with PVC insulated 4.0 sq mm copper conductor wires. All power outlets shall be connected with 4.0 sq mm PVC insulated copper conductor wires to the earth terminal of outlet. Separate circuit shall run with PVC insulated 4.0 sq mm copper conductor wires for water heaters, kitchen equipment, window Air conditioners and similar outlets at locations as shown on drawings.

The minimum size of wire from final distribution board to first tapping point in the circuit shall be 2.5 Sq mm. PVC insulated stranded copper conductor wires. Circuit shall not have more than a total of 8 points of fans, 5A Light sockets and Light points and its load shall not exceed 800 watts. Not more than two power circuits shall be drawn through the same conduit. Separate earth wire shall run for each circuit. In case two circuits of the same phase are running in the same conduit then a common earth wire is permissible. The size of earth wire for all the light points, ceiling fans, exhaust fans, light sockets, outlet boxes etc. shall be 1.5 sq mm PVC insulated copper conductor wires.

1.14. JOINTS

All joints shall be made at main switches, distribution boards, socket outlets, lighting outlets and switch boxes only. No joints shall be made inside conduits and junction boxes. Conductors shall be continuous from outlet to outlet. Joints where unavoidable, due to any specified reasons, prior permission in writing shall be obtained from the Consultant before making such connections.

1.15. MAINS AND SUB-MAINS

Mains and sub-mains wires where called for shall be of the rated capacity and approved make. Every main and sub-main shall be drawn into an independent adequate size conduit. Adequate size draw boxes shall be provided at convenient locations to facilitate easy drawing of the mains and sub-mains. An independent earth wire of proper rating shall be provided. The earth wires shall run along the entire length of the mains and sub-mains. The earth wires shall be fixed to conduits by means of suitable copper clips at not more than 1000mm distance. Where mains and sub-main cables are connected to switch gears, sufficient extra length of sub-main and main cable shall be provided to facilitate easy connections and maintenance.

1.16. LOAD BALANCING

Balancing of circuits in three phase installation shall be planned before the commencement of wiring, shall be got approved by the Consultant and shall be strictly adhered to.

1.17. COLOUR CODE OF CONDUCTORS

Colour code shall be maintained for the entire wiring installation; red, yellow, blue for three phases and “off” circuit black for neutral and green for earth (or bare earth wire)

Telephone Multicore cables shall be of approved make and shall conform to following specifications.

i) Type of conductor ….. Electrolytic Annealed Tinned Cu conductor. (ATC)

ii) Diameter of Conductor ... 0.61 mm dia uniform (minimum size)

iii) Weight of conductor .... 2.52 Kg/Km minimum. iv) Resistance of conductor at 20 degree... 60 Ohms/Km,

v) Radial Thickness of PVC insulation...0.3mm + 0.05mm uniform

vi) Radious Thickness of PVC sheathing ... 1.2mm uniform + 0.2mm

vii) Overall diameter of insulated conductor... 1.2mm uniform

viii) High voltage Test. Able to withstand upto 500 volts D.C. up to 12 hours immersion in water.

1.18. MOUNTING HEIGHT DETAILS

1.18.1 The bottom of the light/fan switch board shall be at 1.0 meter above the finished floor level unless otherwise specified.

1.18.2 All plugs and socket outlets shall be of 5/6 pin type and the appropriate pin of socket shall be connected to the earthing system.

1.18.3 In case of light and fan circuit only 5 pin 5A socket outlets shall be used. 6 pin 15A socket outlets shall be provided only on power circuits. The switch controlling the socket outlet shall be adjacent to it. 6 pin 15 A socket outlets shall be located at the levels as indicated below unless otherwise specified.

a In Kitchen at 300 mm above kitchen platform or FFL as per the location shown on the drawings.

b In the bathroom at 1800 mm above FFL but Mirror lights shall be above Mirror of wash basin.

c In all other rooms at 150 mm above FFL unless otherwise specified.

1.18.4 All Bracket light fittings unless otherwise specified shall be at a height of 2.1 meters above the floor level unless otherwise specified for some locations.

1.18.5 Unless otherwise specified, the ceiling fans shall be hung at 2.75 meters above the finished floor level.

1.18.6 Lamp holders in bath rooms are to be shrouded with insulating materials and fitted with protective shield.

1.18.7 All live conductors are to be insulated and safe guarded to avoid danger.

1.19 M.S.CONDUIT ACCESSORIES & CONNECTIONS:

The accessories used for M.S. conduits shall conform to Indian Standards IS: 3837-1966-(Specification for fittings for Rigid steel conduits with the latest amendments. M.S. conduits shall be joined by means of screwed or plain couplers. Where there are long runs of straight conduits, inspection boxes shall be provided at intervals as approved by the Consultant. The threads of the pipe and sockets shall be free from grease and oil. It shall be thoroughly cleaned before making the screwed/plain joints.

Proper jointing and cleaning materials as recommended by manufacturers shall be used for jointing and cleaning of M.S. pipes. Use M.S. couplers and connectors for M.S. pipe connections and terminations in boxes. All the joints shall be fully water tight. Junction boxes and running joints shall be provided at suitable places to allow for subsequent extensions if any, without undue dismantling of conduit system. As far as possible diagonal run of conduits shall be avoided. Junction between conduit and adapter boxes, back outlet boxes, switch boxes and the like must be provided with entry spouts and smooth M.S. bushes and M.S. Checknuts. Joints between conduit and iron clad Distribution Boards or control gear shall be effected by means of conduit couplers into each of which will be coupled smooth M.S. bush from the inside of box or case. Conduit system shall be erect and straight as far as possible. All jointing methods shall be subject to the approval of the Consultant.

M.S. CONDUIT CONNECTIONS:

Conduit connections for MS conduits shall be screwed metal to metal and be painted with one coat of self etching zinc chromate primer and two coats of enamel paint. The threads and sockets shall be free from grease and oil. Connections between screwed conduit and sheet metal boxes shall be by means of a brass hexagon smooth bore bush, fixed inside the box. Checknuts to be provided on inside and outside of box and connected through a coupler to the conduit or as directed by the Consultant. The

joints in the conduits shall be free of burrs to avoid damage to insulation of conductors while pulling them through the conduits. Connections between PVC and MS conduits shall be through a junction box. Direct connection between PVC and MS conduits is not allowed.

FAN BOX DETAILS

The Fan Box shall be 100 mm x 100 mm x 75 mm deep, M.S. box made of 2mm thick M.S. sheet, having 12 mm dia M.S. rod, bend at centre to support the fan, top screwed cover etc. as per the approval of the Architect/Consultants.

2 CABLES

2.1. GENERAL

MV Cables shall be supplied, laid tested and commissioned in accordance with drawing specifications, relevant Indian Standards specification, Indian Electricity Act and manufacturers instructions. The cable shall be delivered at site in original drums with manufacturers name clearly written on the drums.

2.2. MATERIAL

MV CABLES : MV Cables shall be PVC insulated aluminium conductor armoured and unarmoured cables conforming to IS: 1554 (part I&II)-1976 & IS : 694-1977 (PVC Insulated cables for working voltages upto and including 1100 volts (second revision) with latest amendments. MV cables shall be suitable for underground use and laid in trenches, ducts, cable trays, under roads and paved areas. MV Cables shall be termite resistant and shall be of approved make.

2.3. JOINTS IN CABLES

The Vendor shall take care to see that all the cables are apportioned to various locations in such a manner as to ensure no straight joints in the cable run. If the straight joint in cable is unavoidable due to any specified reasons, prior permission in writing shall be obtained from the Consultant before the use of such straight joints in cable.

2.4. JOINTING BOXES FOR CABLES

Cable jointing boxes shall be of appropriate size, suitable for PVC insulated cables of particular voltage ratings, and shall be manufactured by approved manufacturers.

2.5. JOINTING OF CABLES

All cable joints shall be made in suitable approved cable joint boxes. Jointing of cables in the joint boxes and the filling in of compound shall be done in accordance with the best practice in trade, in accordance with manufacturer's instructions and in an approved manner. All straight Joints shall be done in epoxy mould boxes with TROPOLIC/ M-Seal resin or approved equal. All terminal ends of conductors shall be heavily soldered upto at least 50mm length.

All cables shall be jointed colour to colour and tested for insulation resistance and continuity before jointing commences. The seals of cables must not be removed until preparations for jointing are completed. Joints shall be finished on the same day as commenced and sufficient protection from the weather shall be arranged.

2.6. FILLING OF EPOXY COMPOUND

Equal quantities of resin and hardner shall be taken and mixed thoroughly by hand until the mixture is free from white patches and has uniform colour. No water, oil or any other liquid shall be added to the mixture to make it soft as this will affect the properties of the compound. The mixture shall be used within 30-40 minutes of mixing. The surface on which epoxy compound is to be used shall be free from dust, rust, oil, grease and shall be dry. No disturbance or movement of joint shall be made till the epoxy compound has completely hardened. A smooth surface can be made by rubbing a damp cloth smoothly on the compound before it sets. The joints shall be painted after it has completely hardened.

2.7. CABLES TERMINATION

Cable termination shall be done in terminal cable box using cable glands and the cable ends sealed with sealing compound.

2.8. BONDING OF CABLES

Where a cable enters any piece of apparatus, it shall be connected to the casing by means of an approved type of armoured clamps and gland. The clamps must grip the armouring firmly to the gland or casing, so that in the event of ground movement no undue stress is passed on to the cable conductors. The glands shall be either to the lead sheath by means of 'Plumbing Joint' as on a cone of approved materials, capable of being compressed into lead sheath. The gland or cone shall be capable of effecting a good electrical bond between both the armouring and lead of the cable and the casing.

2.9. LAYING OF CABLES

Cables shall be laid by skilled and experienced workmen using adequate rollers to minimize stretching of the cable. The cable drums shall be placed on jacks before unwinding the cable. Great care shall be exercised in laying cable to avoid forming kinks. The drums shall be unrolled and cables run over wooden rollers in trenches at intervals not exceeding 2 meters. Cables shall be laid at depth of 750mm depth below ground level in the case of MV Cables. A cushion of sand, not less than 75mm shall be provided both above and below the cable, joint boxes and other accessories. HV and MV cables shall not be laid in the same trench and/or along side of water main. The cable shall be laid in excavated trench 80mm layer of sand shall be spread over the cable. The cable then shall be lifted and placed over the sand bed. The second layer of 80mm sand then be spread over the cable. The relative position of the cables laid in the same trench shall be preserved and the cables shall not cross each other as far as possible. At all changes in direction in horizontal and vertical planes, the cable shall be bent smooth with a radius of bend not less than 12 times the diameter of cable. Minimum 3 M long loop shall be provided at both sides of every straight joint and 5 Meters at each end of the cable. Distinguishing marks shall be made on the cable ends for identification. Insulation tapes of appropriate voltage and in red, yellow and blue colours shall be wrapped just below the sockets for phase identification. Aluminium Labels etched with the size of cable shall be provided around the two ends of each cable.

2.10. PROTECTION OF CABLES

The cable shall be protected by placing burnt Brick/stones over the cables 600mm wide on the top layer of sand for the full length of underground cable. Where

more than one cable is running in the same trench, the Brick/stones shall cover all the cables and shall project a minimum of 80mm on either side of the cable.

Cable under road crossings and any surfaces subjected to heavy traffic, shall be protected by running them through Hume pipes of suitable size and Heavy grade quality.

Cables under paved areas (which form part of the building) shall be protected by running them through Stoneware/Hume pipes of 150 mm dia(minimum size) one meter below road level.

CABLES INSIDE BUILDINGS

Cables inside buildings shall be laid either in masonry trenches or carried on through trays or brackets. Where cables run in ducts inside the buildings the cables shall be adequately clamped to angle iron brackets, secured to the wall, as directed and approved by the Consultant. Where cables are suspended from ceilings they shall be carried over troughs or trays as directed and approved by the Architect. The supports shall be placed not more than 1.0 meter apart. All cables passing through walls below paved area, and concrete shall run through stone ware pipes or Hume pipes of adequate diameter recessed or exposed as directed. Cables running along walls shall be supported and clamped to saddles, or hanger rigidly anchored at close intervals. Clear space between parallel cables shall be equal to the diameter of the cable but not less than 50mm. Where called for cable trenches shall be filled with fine sand. The Vendor shall ensure that hangers, brackets and other supporting arrangements for cables are placed in proper position at the time of building the walls, concreting slabs, etc. cutting holes or opening in concrete may be carried out only with prior permission of the Architect.

All excavations and back fill including timbering, shoring and pumping required for the installation of the cables shall be carried out as per the drawings and requirements laid down elsewhere. Trenches shall be dug true to line and grades. Back fill for trenches shall be filled in layers not exceeding 150mm. Each layer shall be properly rammed and consolidated before laying the next layer. The Vendor shall

restore all surfaces roadways, side walks, curbs, walls or other works cut by excavation of their original condition, to the satisfaction of Consultant.

2.12. MARKERS AND WARNING PLATES

Approved CI cables markers shall be provided along the route of the cables at every 30 meter distance and at both ends of road crossing, indicating HV cables and MV cables as applicable. Special CI markers shall be provided at all buried cable joints indicating "Electrical Cable Joints. GI plates engraving the size of cable and the place it serves shall be tied to the cable at regular intervals of 2 meters for easily identification of the cables.

2.13. TESTING OF CABLES

Prior to burying of the cables, following tests shall be carried out:

a. Insulation test between phases and phase to earth for each length of cable before and after jointing.

On completion of cable laying work and jointing the following tests shall be conducted in the presence of the Consultants.

a. Insulation Resistance test (Sectional and Overall)
b. Continuity Resistance Test.
c. Sheath continuity Test.
d. Earth Test.
e. Physical Dimensions Test.

All tests shall be carried out in accordance with relevant Indian Standard Codes of practice and Indian Electricity Rules. The Vendor shall provide necessary instruments, equipment and labour for conducting the above test and shall bear all expenses in connection with such tests. All tests shall be carried out in the presence of the Architect / Consultant.

3.0 EARTHING

3.1 EARTHING

All the non-current metal parts of electrical installation shall be earthed properly. All metal conduits, trunking, cable sheaths, switchgear, outlet boxes, distribution boards, light fittings, fans and all other parts made of metal or conductive material shall be bonded together and connected by means of specified earthing system.

All earthing will be in conformity with the relevant provision of Rules 33 and 61 of the Indian Electricity Rules 1956 and Indian Standard Specifications IS: 3043-1987 with latest amendments.

3.2. EARTHING CONDUCTORS

All earthing conductors shall be of high conductivity electrolytic copper of 99 % purity and shall be protected against mechanical injury or corrosion.

3.3. SIZING OF EARTHING CONDUCTORS

The cross sectional area of copper earthing conductor shall be same as the active conductor for sizes of active copper conductor upto 4.0 sqmm and shall be half the size for 16 sq mm active copper conductor and above. All fixtures, fans, outlet boxes and junction boxes shall be earthed with 1.5 sqmm PVC Insulated copper conductor wires. All power sockets and single phase A/C units shall be earthed with 4.0 PVC Insulated copper conductor wires. All Three phase Final Distribution Boards shall be earthed with 2 nos 4 mm dia bare copper conductor wires. The sizes of the earth continuity conductors should not be less than half of the largest current carrying conductors.

The Sub-Distribution Board shall be earthed to 2 nos 600mm x 600mm x 3mm copper plate earthing stations through 25m x 3 mm copper strips.

3.4. CONNECTION OF EARTHING CONDUCTORS

Main earthing conductors shall be taken from the earth connections at the main switchboards to an earth electrode with which the connection is to be made. Submain earthing conductors shall run from the main switchboard to the sub-distribution boards. Final distribution boards earthing conductors shall run from sub-distribution boards.

3.5. PROHIBITED CONNECTIONS

Neutral conductor, sprinkler pipes, or pipes conveying gas, water, or inflammable liquid, structural steel work, metallic enclosures or cables and conductors, metallic conduits and lightning protection system conductors shall not be used as a means of earthing an installation or even as a link in an earthing system. The electrical resistance of metallic enclosures for cables and conductors measured between earth connections at the main switchboard and any other point on the completed installation shall be low enough to permit the passage of current necessary to operate fuse or circuit breakers and shall not exceed 1 ohm.

3.6. PROTECTION FROM CORROSION

Connections between copper and galvanized equipment shall be made on vertical face and protected with paint and grease. Galvanized fixing clamps shall not be used for fixing earth conductors. Only copper fixing clamps shall be used for fixing earth conductors. When there is evidence that the soil is aggressive to copper, buried earthing conductors shall be protected by suitable serving and sheathing.

3.7. EARTHING STATION

Plate Electrode Earthing: Earthing electrode shall consist of a tinned copper plate not less than 300mm x 300mm x 3mm thick as called for in the Schedule. The plate electrode shall be buried as far as practicable below permanent moisture level but in any case not less than 4.2 meters below ground level. Wherever possible earth electrodes shall be located as near the water tap, water drain or a down take pipe as possible. Earth electrodes shall not be installed in proximity to a metal fence. It shall be kept clear of the buildings foundations and in no case shall it be nearer than 2 meters from the outer face of the wall. The earth plate shall be set vertically and surrounded with 150mm thick layer of charcoal, dust and salt mixture. 20mm GI pipe shall run from the top edge of the plate to the ground level. The top of the pipe shall be provided with a funnel and a mesh for watering the earth through a pipe. The funnel over the GI Pipe shall be housed in a masonry chamber, approximately 300mm x 300mm x 300mm

deep. The masonry chamber shall be provided with a cast iron cover resting over a GI frame embedded in masonry. Refer Sketch for additional details.

Pipe Electrode Earthing: Earthing electrode shall consist of a GI Pipe (class 'A') Indian Tube Company make or approved equal not less than 40mm dia and 4.5 meters long. GI Pipe electrode shall be cut tapered at the bottom and provided with holes of 12mm dia drilled at 75mm interval upto 2.5 meters length from bottom. The electrode shall be buried vertically in the ground as far as practicable below permanent moisture level with its top not less than 1.25 M below ground level. The electrode shall be in one piece and no joints shall be allowed in the electrode. Wherever possible earth electrodes shall be located as near water tap, water drain or a down take pipe. Earth electrodes shall not be located in proximity to a metal fence. It shall be kept clear of the building foundations and in no case shall be nearer than 2 meters from the outer face of the wall. Refer Sketch for additional details.

The pipe earth electrode shall be kept vertically and surrounded with 150mm thick layer of charcoal dust and salt mixture upto a height of 2.5 meters from the bottom. At the top of the electrode a funnel with a mesh shall be provided for watering the earth. The main earth conductors shall be connected to the electrode just below the funnel, with proper terminal lugs and check nuts. The funnel over the GI pipe and earth connection housed in a masonry chamber, approximately 350mm deep. The masonry chamber shall be provided with a cast iron cover resting over a CI frame embedded in masonry.

3.8. EARTH CONNECTION

All metal clad switches and other equipment carrying single phase current, shall be connected to earth by a single connection. All metal clad switches carrying medium voltage and high voltage shall be connected with earth by two separate and distinct connections. The earthing conductors inside the building wherever exposed shall be properly protected from mechanical injury by running the same in GI Pipe of adequate size.

Earthing conductors outside the building shall be laid 600mm below the finished ground level. The over lapping in copper strips at joints where required, shall be minimum 75mm. The joints shall be riveted and brazed with copper rivets and greased in approved manner. Sweated lugs of adequate capacity and size shall be used for all termination of wires above 1 Sqmm size and bare copper wire above 2.0mm dia. Lugs shall be bolted to the equipment body after the metal body is cleaned of paint and other oily substance and properly tinned. The earth wires entering the Final Distribution Boards shall be terminated with copper sockets crimped to its ends and tightened to the terminal with the help of flat end brass screws.

3.9. EARTH RESISTANCE

The earth resistivity of the soil where the earthing stations are located shall be submitted to the Consultant before the earthing work starts and get the approval of the Consultant/Owner. If the earth resistance is too high and multiple electrode earthing does/not give adequate low resistance to earth, than the soil resistivity immediately surrounding the earth electrodes shall be reduced by adding sodium chloride, calcium chloride, sodium carbonate, copper sulphate, salt and soft coke or charcoal in suitable proportions as directed by the consultants.

3.10. RESISTANCE TO EARTH

The resistance of each earth system shall not exceed 1.0 ohm in the case of Medium Voltage system and 0.5 ohm in the case of High Voltage system.

4 TESTING

4.1. GENERAL

On completion of the work the entire installation shall be subject to following tests:

a) Wiring Continuity Test
b) Insulation Resistance Test
c) Earth Continuity Test

d) Earth Resistivity Test

Besides the above any other test specified by the local Authority shall also be carried out.

All tested and calibrated instruments for testing, labour, materials and incidentals necessary to conduct the above tests shall be provided by the Vendor at his own cost.

4.2. TESTING OF WIRING

All wiring systems shall be tested for continuity of circuits, short circuits and earthing after wiring is complete and before energizing. The Test Certificates for the complete wiring shall be submitted in the Format and the Total Electrical Installation shall be got approved by the Electrical Inspector.

4.3. INSULATION RESISTANCE TEST

The insulation resistance shall be measured by applying between earth and the whole system of conductors, or any section thereof with all fuses in place and all switches closed (except in concentric wiring) all lamps in position of both poles of the installation, otherwise electrically connected together, a direct current pressure of not less than twice the working pressure (provided that it does not exceed 660 volts for medium voltage circuits) be applied. Where the supply is derived from A.C. three phase system, the neutral pole of which is connected to earth, either direct or through added resistance, pressure shall be deemed to be that which is maintained between the phase conductor and the neutral. The insulation resistance measured as above shall not be less than 50 divided by the number of points on the circuit provided that the whole installation shall not be required to have an insulation resistance greater than one mega ohm. The insulation resistance shall not be measured between all conductors connected to one phase conductor of the supply and all the conductors connected to the middle wire or to the neutral or to the other phase conductors of the supply. Such a test shall be carried out after removing all metallic connections between the two poles of the installation and in these circumstances the insulation resistance between conductors of installation shall not be less than that specified above.

The insulation resistance between the case of frame work of housing and power appliances, and all live parts of each appliance shall not be less than that specified in the relevant Indian Standard Specifications or where there is no such specification shall not be less than half a mega ohm.

4.4. TESTING OF POLARITY OF NON-LINKED SINGLE POLE SWITCHES

In a two wire installation a test shall be made to verify that all non-linked single pole switches have been fitted in the same conductor throughout, and such conductor shall be labeled or marked for connection to an outer or phase conductor or to the non-earthed conductor of the supply. In the three or four wire installation a test shall be made to verify that every non-linked single Pole switch is fitted in a conductor to one of the outer or phase conductor of the supply. The entire electrical installation shall be subject to the final acceptance of the Consultant as well as the local authorities.

4.5. EARTH RESISTIVITY TEST

Earth resistivity test shall be carried out in accordance with Indian Standard code of practice for earthing IS: 3043:1987. All tests shall be carried out in the presence of the Consultant/Owner.

4.6 TEST CERTIFICATES

The Electrical Installation shall be tested as per relevant Indian Standards and Test Certificate to this effect shall be submitted to the Owner. The Vendor has to get the Total Electrical Installation approved by the Electrical Inspector and the permission to energize the same shall be submitted to the Owner.

5 SAFETY REQUIREMENTS

5.1 SCOPE

This section covers the requirements of items to be provided in the sub-station for compliance with statutory regulations, safety and operational needs

5.2 REQUIREMENTS

Safety provisions shall be generally in conformity with the relevant Indian Standards and I.E. Rules and Regulations. In particular the following items shall be provided.

(a) Insulation Mats

Insulation Mats conforming to IS: 5424-1969 shall be provided in front of main switch boards and other control equipment as specified.

(b) First Aid Charts and First Aid Box

Charts (one in English, one in Hindi, one in Regional language), displaying methods of giving artificial respiration to a recipient of electrical shock shall be prominently provided at appropriate place. Standard First Aid Boxes containing materials as prescribed by St. John Ambulance brigade or Indian Red Cross should be provided in each sub-station.

(c) Danger Plate

Danger plates shall be provided on HV and MV equipments. MV danger notice plate shall be 200mm x 150mm made of mild steel at least 2mm thick vitreous enameled white on both sides and with inscriptions in signal red colour on front side as required.

(d) Fire Extinguishers

Portable CO2 conforming to IS : 2878-1976 dry chemical conforming to IS 2171-1976 extinguishers shall be installed in the sub-station at suitable places as specified.

(e) Fire Buckets

Fire buckets conforming to IS: 2546-1974 shall be installed with the suitable stand for storage of water and sand.

(f) Tool Box

A standard tool box containing necessary tools required for operation and maintenance shall be provided in sub-station.

(g) Caution Board

Necessary number of caution boards as “Man on Line” “Don’t switch on’ etc. shall be available in the sub-station.

(h) Key Board

A key board of required size shall be provided at a proper place containing castel key, and all other keys of sub-station and allied areas.

6.0 M V PANELS, SUB-DISTRIBUTION BOARDS & FINAL DISTRIBUTION BOARDS

All the M V Panels, Sub-Distribution Boards(SDB) & Final Distribution Boards(FDB) shall be suitable for operation on 3 phase, 4 wire, 415 Volts, 50 cycles, neutral grounded at transformer and short circuit level not less than 31 MVA at 415 volts.

The MV Panel, SDBs & FDBs shall comply with the latest edition of relevant Indian Standards and Indian Electricity Rules and Regulations. All Panels and Distribution Boards shall be fabricated by the Vendor by using specified components as per the specifications given below:

6.1. CONSTRUCTION FEATURES

The Distribution Boards and Panels shall be metal enclosed sheet steel cubical, indoor, dead front, floor mounting type. The distribution boards shall be totally enclosed, completely dust and vermin proof. Gaskets between all adjacent units and

beneath all covers shall be provided to render the joints dust proof. Panels and Distribution boards shall be preferably arranged in multitier formation. All doors and covers shall be fully gasketed with foam rubber and/or rubber strips and shall be lockable. All MS sheet steel used in the construction of distribution boards and Panels shall be 2mm thick and shall be folded and braced as necessary to provide a rigid support for all components. Joints of any kind in sheet metal shall be seam welded, all welding slag grounded off and welding pits wiped smooth with plumber metal.

All covers shall be properly fitted and square with the frame, and holes in the panel correctly positioned. Fixing screws shall enter into holes tapped into an adequate thickness of metal or provided with hank nuts. Self threading screws shall not be used in the construction of MV Panel & distribution boards. A base channel of 75mm x 40mm x 5mm thick shall be provided at the bottom. A minimum of 200 mm between the floor of MV Panel & Distribution board and lower most unit shall be provided. The MV Panel & Distribution Boards shall be of adequate size with a provision of 20% spare space to accommodate possible future additional switchgear in addition to spare feeders.

Knockout holes of appropriate size and number shall be provided in the Distribution Board and Panels in conformity with the location of incoming and out-going cables.

Panels and distribution boards shall be provided with removable sheet steel plates at top and bottom to drill holes for cable entry at site. MV Panel shall be of Extendible type.

The Panels and SDBs shall be suitable for IP 42 protection.

6.2. CIRCUIT COMPARTMENTS

Each circuit breaker, MCCB and switch fuse units shall be housed in separate compartments and shall be enclosed on all sides. Sheet steel hinged lockable door shall be duly interlocked with the ACB/MCCB/switch fuse unit in ‘on’ and ‘off’ position. Safety interlocks shall be provided for air circuit breakers to prevent the breaker from

being drawn out when the breaker is in 'on' position. The door shall not form an integral part of the draw out position of the ACB. All instruments and indicating lamps shall not be mounted on the ACB compartment door. Sheet steel barriers shall be provided between the tiers in a vertical section. The Knobs for holding the cubicle door in closed position shall be spring operating rotating type and not screwed type.

6.3. INSTRUMENT ACCOMMODATION

Separate and adequate compartments shall be provided for accommodating instruments, indicating lamps, control Vendors and control fuses etc. These shall be accessible for testing and maintenance without any danger of accidental contact with live parts of the circuit breaker, bus bar and connections.

6.4. BUS BARS & BUS BAR CONNECTION

The bus bar and interconnections shall be of electrolytic Copper of 99.9 % purity of rectangular cross sections suitable for full load current for phase bus bars and full rated current for neutral bus bar and shall be extendible on either side. Minimum 200 Amps capacity bus bars shall be provided in the distribution boards. The bus bars and interconnections shall be insulated with PVC heat shrinking sleeves and colour coded. The bus bars shall be supported on unbreakable, non hygroscopic insulated SMC supports at regular intervals to withstand the forces arising from short circuit in the system. All bus bars shall be provided in a separate chamber and properly ventilated. The current density of copper shall be 1.6 Amps per sq.mm cross sectional area of Bus bar.

All bus bar connections in Panel and Sub-distribution boards shall be done by drilling holes in bus bars and connecting by cadmium plated M.S. bolts and nuts. 20% Additional cross section of bus bars shall be provided in all distribution boards to cover up the holes drilled in the bus bars. Spring and flat washers shall be used for tightening the bolts.

Automatically operated safety shutters to screen the live cluster when the breaker is withdrawn from cubicle is to be provided.

All connections between bus bars and switches and between switches and cable alley terminals shall be through solid copper strips of proper size to carry full rated current and insulated with PVC heat shrinking sleeves. All the M V Panels and SDBs shall be completely factory wired, ready for connection. All the terminals shall have adequate current rating and size to suit individual feeder requirements. Each feeder shall be clearly numbered from left to right to correspond with wiring diagram. All the switches and feeders shall be distinctly marked with a small description of the service installed. Minimum width of busbar Alley shall be 300 mm and that of cable alley shall be 450 mm.

6.5. TERMINALS

The outgoing terminals and neutral link shall be brought out to a cable alley suitably located and accessible from the panel front. The current transformer for instruments metering shall be mounted on the terminal blocks. Cable compartments shall be provided for incoming and outgoing cables.

6.6. WIREWAYS

A horizontal wire way with screwed covers shall be provided at the top to take interconnecting control wiring between different vertical sections.

6.7. CABLE COMPARTMENTS

Cable compartment of adequate size shall be provided in the Sub Distribution Boards for easy termination of all incoming and outgoing cables entering from bottom or top. Adequate proper supports shall be provided in cable compartments to support cables. All incoming and outgoing switch terminals shall be brought out to terminal blocks in the cable compartment.

6.8. METERS

All meters shall be housed in a separate compartment and accessible from front only. Lockable doors shall be provided for the metering compartment. The details of other meters and indicating lamps are as described in each switch board and neutral selector switch of appropriate range and scale. Wiring for meters shall be colour coded

and labeled with approved plastic ferrules for easy identification. All meters shall be digital.

6.9. CURRENT TRANSFORMERS

Where ammeters are called for CT's shall be provided for current measuring more than 60 Amps. Each phase shall be provided with separate current transformer of accuracy class I and suitable V.A. Burden for operation of associated metering. Current transformers shall be in accordance with IS: 2705-1964 as amended upto date and Cast Resin Type.

6.10. INDICATING PANEL AND METERING EQUIPMENT

All meters and indicating instruments shall be accordance with relevant Indian Standards. The meters shall be flush mounted and draw out type. Indicating lamps shall be neon type and of low burden. Indicating lamps shall be backed up with fuses of 5 Amps and toggle switch.

6.11. MOULDED CASE CIRCUIT BREAKERS (MCCB)

MOULDED CASE CIRCUIT BREAKERS (MCCB): MCCB's shall be in accordance with IS: 2516-1985 & IEC 157-1 with the latest amendments. It shall be enclosed type made of Heat resistant high strength, flame retarding, thermosetting material rated for 500 V, 50 Hz. It shall have three position indicator 'ON', 'OFF' & 'TRIP' at top, bottom & middle position. It shall be provided with shunt trip and additional 2 Nos. NO & NC contacts. The minimum breaking capacity of MCCB's shall be 20 KA up to 100 AMPS rating and 35 KA for MCCB's above 100 AMPS rating up to 200 A and 50KA for MCCBs above 200 A. All MCCB.s shall have door operating handle (Rotary Operating Handle). The short circuit with standing capacity shall be ICS Rating and not ICU Rating.

6.12. EARTHING

Copper earth bars of 25mm x 3mm shall be provided for MV Panel and SDBs for the full length and connected to the frame work of the Panel and SDBs.

Provision shall be made for connection from this earth bar to the main earthing bar on both side of the Panel and SDBs.

6.13. PAINTING

All sheet steel work shall undergo a process of degreasing pickling in acid, cold rinsing, phosphating, passivating and then sprayed with a high corrosion resistant

primer. The primer shall be baked in an oven. The finishing treatment shall be by application. Two coats of synthetic enamel paint of approved colour and powder quoted. The seven Tank process shall be adopted.

6.14. LABELS

Engraved anodized aluminium labels shall be provided on all incoming and outgoing feeder switches. Circuit diagram showing the control wiring shall be pasted on inside of the panel door and covered with transparent laminated plastic sheet. The Label shall indicate the name of the feeder, the specific area it is feeding, ampere rating and the cable size it is receiving. The Labels shall be provided on the backside of the Panel in case of back access.

All the SDBs and Panels shall be subject to tests specified in relevant Indian Standards and test certificate shall be furnished.

6.15. SHOP DRAWING

Before fabricating the Panels and the SDBs/FDBs the Vendor has to submit shop drawing with the wiring diagram for all the Panels and SDBs/FDBs to the Consultant and get approval from the Consultant.

6.16. INSPECTION

At all reasonable times during production and prior to shipment of equipment the Vendor shall provide and secure for Consultant/ Owners representative every reasonable access and facility at their plant for inspection.

6.17. TEST CERTIFICATES

Testing of Panels and SDBs shall be carried out at factory and at site as specified in Indian Standards. The test certificates for the tests carried out at factory shall be submitted in duplicate.

6.18 MINIATURE CIRCUIT BREAKER & FINAL DISTRIBUTION BOARDS

Miniature circuit breaker shall be quick make and break type and confirm with Indian Standards IS: 8828 – 1978 (Specifications for Miniature Air Break Circuit breakers for voltage not exceeding 1000V) The housing of MCB’s shall be heat resistant and having a high impact strength. The fault current of MCB’s shall not be

less than 9000 Amps at 230 volts. The MCB's shall be flush mounted and shall be provided with trip free manual operating mechanism "ON" and "OFF" indications.

The MCB contacts shall be silver nickel and silver graphite alloy coated with silver. Proper arc chutes shall be provided to quench the arc immediately. MCB's shall be provided with magnetic fluid plunger release for over current and short circuit protection. The over load or short circuit devices shall have a common trip bar in the case of DP and TPN Miniature circuit breakers. The MCB shall be tested and certified as per Indian Standards prior to installation.

All final distribution boards shall be provided with MCB's. TPN final distribution boards shall consists of 3 rows of single pole MCB's for each circuit, and each phase shall be connected to the incoming supply through double pole MCB isolator. Separate neutral bus bars shall be provided for each phase in the case of TPN Distribution Boards. In case Earth Leakage Circuit Breaker (ELCB) has to be provided in Final Distribution Boards then on the incoming side instead of DP MCB Isolator a DP ELCB shall be provided of current rating same as that of DP MCB Isolator and current sensitivity maximum of 100mA. The ELCB shall conform to IS: 12640 - 1988 (Residual Current-Operated Circuit Breakers- Specifications) Solid links between MCB Isolator and backed by HRC fuse/Rewirable fuse and Neutral bus bar shall be provided. The Neutral shall be looped from one phase to another through DP Isolators. MCB's shall be provided on the phase or live conductor of each circuit and a neutral bar for the earthed neutral. The individual MCB in each row shall be detachable without disturbing the row of MCB's. Phase separation barriers of 3mm thick bakelite sheet shall be provided between the back of MCB's fitting 3mm thick bakelite sheet cover shall be provided for each phase. There shall be ample space behind the back of MCB's to accommodate all the wiring. All the internal wiring of final distribution Boards shall be concealed behind 3mm thick bakelite sheet. All the distribution boards shall be completely factory wired, ready for connection. All the terminals shall have adequate current rating and size to suit individual feeder requirements. Each circuit shall be clearly numbered from left to right to correspond with wiring diagram. All the switches and circuits shall be distinctly marked with a small description of the service installed. A four way 60 A Brass/Copper neutral link shall be provided with terminals suitable to

receive 16 sq mm stranded copper wires with end sockets. The final Distribution Boards shall be fabricated as per consultants design.

FIRE DETECTION AND ALARM SYSTEM

SCOPE

The scope of this section covers design, manufacturers, supply, installation, connecting, testing and commissioning of conventional type fire detection and alarm system.

The work includes supply, installation, testing and commissioning of:

M S conduit work with all accessories.
Complete wiring in existing concealed/surface conduits
Photoelectric type smoke detectors.
Rate of rise cum fixed temperature heat detectors.
Manual alarm stations.
Response indicators.
Main control and indicating panel/zonal panel.

A high degree of operational safety, high quality and well designed detectors, signal panels and auxiliary equipment shall be accepted. Supplier shall confirm that the electronic components used in alarm and indicating panels are of standard manufacturers and are approved type, also the name of the manufacturer shall be indicated.

The Vendor shall obtain clearance and approval from the Local Fire Authorities, the insurance company insuring the building or any other agencies whom approval is required.

7.2 STANDARDS

For Spacing of detectors BS : Code of Practice

For sensitivity of smoke detector	BS	:	5446 - 1977
For control and indicating panel	IS	:	2189 – 1988
For smoke Detector	IS	:	11360 - 1985
For Heat Detector	IS	:	2175 – 1988

7.3 OPERATING VOLTAGE

220 volts AC + 10% 50 cycles (single phase) and 24 volts DC +- 10%

7.4 ETECTORS IN GENERAL

COMPATIBILITY

All automatic fire detectors shall be interchangeable without requiring different mounting bases nor alternations in the signal panel.

RESPONSE SPECTRUM

Combustion gas detectors shall respond to both visible and invisible aerosols, size and colour of the aerosols shall not have a decisive influence on the response of the detector.

SENSITIVITY

On average, 30 mgr of burned material per cu.m (as measured in a 1 cu.m chamber) shall release an alarm.

POWER CONSUMPTION

Each detector shall use the minimum of power, for economic circuits, so that it shall be possible to connect atleast 20 detectors per zone. Distance upto 1000 meters from detector to signal panel shall not influence the number of detectors per zone.

BUILT-IN-RESPONSE INDICATOR

Each detector shall incorporate an indicator “LED” at the base of the detector which shall light up on actuation of the detector to locate the detector which is operated. The detector shall not be affected by failure of the response indicator lamp.

RESPONSE INDICATORS

It shall be possible to provide a secondary response indicator for the detector outside the closed room.

MAINTEANCE

All detectors shall be fitted either with plug-in system or bayonet type connections only, from the maintenance and compatibility point of view.

CONSTRUCTION

The detector shall be vibration and shock proof. When disassembling for cleaning purpose, its components must not be damaged by static over voltage.

ATMOSPHERIC AND THERMAL DISTURBANCES

The detector shall also be designed as to be practically immune to environmental criteria such as air currents, humidity, temperature fluctuations, pressure and shall not release false alarm.

CONTINUOUS OPERATION

An alarm release shall not effect a detector's good functioning. After resetting the alarm the detector shall resume operation without re-adjustment of any kind.

ADAPTABILITY TO AMBIENT CONDITIONS

Detectors shall be designed for adaptability to humid and explosion endangered locations.

PHOTOELECTRIC SMOKE DETECTORS

Smoke detectors shall connect with two wires to one of the Fire Alarm Panel Loops. The detectors shall use the photoelectric (light-scattering) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog value for smoke density. The detectors shall be ceiling mounted type and shall include a twist-lock base.

The detectors shall provide dual alarm and power LEDs. Both LEDs shall flash under normal conditions, indicating that the detector is operational and in regular communication with the control panel. Both LEDs may be placed into steady illumination by the control panel; indicating that an alarm condition has been detected. An output connection shall also be provided in the base to connect an external remote alarm LED.

The area covered by each smoke detector shall be as per IS-2189.

Detectors shall be suitable for an operating temperature 0 degree C to 55 degree C and

Relative humidity of 0% to 95%.

Detectors shall be suitable for a supply voltage of 17 to 28 V DC without affecting the sensitivity.

The detector shall have the approval of UL/FM/VDS/LPC only.

THERMAL DETECTORS

Thermal detectors shall connect with two wires to one of the Fire Alarm Panel loops. The detectors shall use an electronic detector to measure thermal conditions caused by a fire and shall, on command from the control panel, send data to the panel representing the level of such thermal measurements. The detectors shall be ceiling-mounted type and shall include a twist-lock base.

The detectors shall provide dual alarm and power LEDs. Both LEDs shall flash under normal conditions. Both LEDs may be placed into steady illumination by the control panel, indicating that an alarm condition has been detected.

Detectors shall be suitable for an operating temperature 0 degree C to 22 degree C and relative humidity of 0% to 95%.

Detectors shall be suitable for a supply voltage of 17 to 28 V DC without affecting the sensitivity.

The detector shall have the approval of UL/FM/VDS/LPC only.

7.7 MANUAL CALL STATIONS

Manual Call stations shall be provided to connect to the Fire Alarm Panel loops.

Manual stations shall be constructed of high impact LEXAN sheet with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in raised letters. Press/back stations with reset table capacity shall be acceptable.

Stations shall be suitable for surface mounting as shown on the plans, or semi-flush mounting, and shall be installed not less than 42 inches, nor more than 48 inches above the finished floor unless otherwise specified by applicable building codes.

7.8 RESPONSE INDICATOR

Response indicator shall be LED (light emitting diode) type, and shall indicate when a detector senses the fire.

REPEATER PANEL

Repeater panels are to be provided at remote location for monitoring the health of FAS. It should have 2 line 40 inches character display along with CEO status indicator. Battery backup shall be provided as an in-built feature and all information will be presented in clear English language. It shall be suitable for operation from 0 degree C to 49 degree C and shall be flush mounted.

ELECTRONIC HOOTERS

All Hooters should be able to provide at least a minimum of 3 different tones, which should be user configurable. The minimum decibel level of each hooter should be 90db at 1 mtr. All hooters should be UL/FM listed.

The Electronic Hooters shall be housed in MS enclosure of 1.5 mm sheet metal.

The Hooters shall be with built on oscillator & amplifier.

The Hooters shall give wailing sound whenever it received 24 V supply from panel on receipt of Fire signal.

The MS box shall be painted with Fire Red (Power Coated)

MAIN FIRE ALARM CONTROL PANEL

Control Panel

The control cabinet shall be dust proof and shall be provided with a glass door with lock and key to prevent tempering by unauthorized persons.

The control circuit shall consist of glass epoxy (PCB) printed circuit board, silver plated and treated with protective layer of special lacquer for protection against corrosion. The alarm circuitry shall be 100% solid state without the use of any relays anywhere in zone card.

The zone cards shall be modular and interchangeable.

Every zone shall have individual control for test acknowledge and any zone shall be isolated without affecting the working of the other zones in the panel.

Sounder silencing control shall be provided which shall remain in visual indication at the same time making the panel from to receive alarm from any other zone without the need for resetting the entire panel.

Silencing switches/push buttons – the system shall be so designed that once an alarm has been given it shall continue till the alarm sounder is switched off. The silencing switches/push buttons in their 'OFF' position shall give and indication of this fact on the main control panel or transfer the alarm signal to supervisory sounders under the supervision of the responsible person so that they may put use of the smallest number of call points. Operation of silencing switch shall not prevent sounding of alarm from any other zone simultaneously.

Central control and indicating panel shall be suitable for conventional Fire Detection and Alarm System and shall comply with IS: 2189-1988.

Control panel shall support the following Fire-Detection components.

Smoke Detectors
Detectors (Both fixed & rate of temperature rise type)
Manual Call Stations

System shall be completely backed up against Mains failure for at least 8 hours and shall be suitable for the following types of batteries.

Lead acid Maintenance free.
Lead acid non-maintenance free
Lead acid semi-maintenance free
Nickel Cadmium.

System shall be self diagnostic and shall cover the following:
Components/Modules of the fire panel.
Faulty detectors
Missing detectors
Open circuit short circuit conditions of the detector cable.
Suitable indication shall be given on the panel.

Zone wise annunciation of alarm by using:
Buzzer Sounders

7.12. BATTERY

Suitable rating ampere Hours 24 Volts DC sealed maintenance free batteries shall be provided for Fire Detection and Alarm System. The battery rating is indicative only. It shall be sized by bidder to cater to all momentary and short time loads in addition to supplying the continuously rated loads for duration of 8 hours. However minimum size shall be 65 AH.

Battery Charger

Bidder shall furnish the battery charging system complete with all necessary accessories such as transformer, rectifier, switches, fuses, starters, contactors, ammeter, voltmeter, protections and other, devices for trouble free operation.

Construction features

Housing of battery charger shall be 2 mm thick CRCA steel sheet cabinet for indoor installation and shall be floor mounted type. The cabinet shall be folded and braced as necessary to provide a rigid support for all components. Louvers shall be provided in the cabinet for ventilation. PVC sheets of 3 mm thick shall be provided on the selves on which the batteries are to be placed.

Input

240 volts AC 50 cycles, single phase with tappings of 0-200-220-240-260 volts on the primary side of the transformer.

Output

DC output shall be 24 volts. DC bridge rectifier shall be of silicon type, having full wave rectification. Suitable contactor, relay, reset shall be provided as required.

7.13 CABLES

All PVC insulated FRLS copper conductor stranded cables shall be 650 volts grade and shall generally conform to IS-1554-1988 and meet the signal cabling requirement of the system manufacturer.

Strands of cables shall not be cut to accommodate & connect to the terminals. Terminals shall have sufficient cross-sectional area to take all the strands.

Cables shall be laid by skilled and experienced workmen using adequate rollers to minimize stretching of the cable. The cable drums shall be placed on jacks before unwinding the cable. Great care shall be exercised in laying cables to avoid forming kinks. At all changes in direction in horizontal and vertical planes, the cable shall be bent smooth with a radius as recommended by the manufacturer's. All cables shall be laid with minimum one diameter gap and shall be clamped at every metre and shall be tagged for identification with aluminium tag and clamped properly. Tags shall be provided at both ends and all changes in directions both sides of wall and floor

crossings. All cable shall be identified by embossing on the tag the size of the cable, place of origin and termination.

These shall be measured on linear basis including the fittings required like, end termination junction boxes.

POINT WIRING

The rates for all point wiring items shall include:

1. Conduits, Conduit specials, bushes and other fittings concealed or exposed as called for.

2. Embedding conduit and allied fittings including the outlet boxes in walls, floors etc., during construction and/or in chases including cutting chases and making good with cement mortar as necessary in the case of concealed conduit work.

3. Providing and fixing approved fixing devices, saddles and grouting the same as required for exposed conduits.

4. Fabrication and Supply of G.I .boxes for switches, ceiling fan hooks, Exhaust fans outlet and lighting fixtures with 1.6 mm thick sheet steel.

5. Providing and fixing junction boxes with 3mm Hylam or 3mm/5mm thick Perspex sheet cover duly painted from inside to match the colour of the walls. All Junction boxes shall be MS only.

6. All fixing accessories such as clips, brass screws/brass washer's rawl plugs etc.

7. All work & material necessary (including circuit wiring from DB to first tapping point of each circuit with 2.5 sq. mm wires) in complete wiring of a switch circuit of any length from the distribution board to the following via the switch:

a) Ceiling rose
b) Connector
c) Back plate
d) Socket outlet

e) Lamps Holder

f) Any other terminal outlet boxes

g) Ceiling fan and Exhaust fan

8. Switch, socket outlet as called for.

9. Cable/wire as required upto lamp holder.

10. All metal boxes and boards concealed or surface mounted including those required for housing fan regulators.

11. All accessories necessary to complete wiring as specified.

12. FRLS PVC Insulated stranded Copper conductor earth wire for fixtures, switch outlet boxes and third pin of 5/15 Amps. Socket to common earth.

13. Painting all exposed M.S. conduits, outlet boxes and junction boxes.

14. M.S. conduit for concealed and exposed wiring.

15. 2 mm dia G.I. pull wires in conduit work, wherever necessary.

16. The switch plate shall be made of I.S.I. grade Urea Formaldehyde Moulding powder. The base of the switches shall be made from high heat resistant phenol formaldehyde powder. The cost of switches shall include the cost of cover plates, cadmium fixing screws etc.

The switches/sockets shall be rocker operated.

17. Separate Earth wire shall run along with each circuit both for power and light circuits.

18. Cutting of floor and making good for carrying conduits also.

19. Numbering of Circuits with ferrules for all circuits at both ends.

Providing 15 Amps capacity Bakelite terminal Blocks for terminating the phase, neutral and earth wire at each fixture location. PVC insulated copper conductor wire ends before connection shall be properly soldered (at least 15 mm length) with special Cu solder for copper conductor or shall be properly crimped with copper lugs/sockets as the case may be. Strands of wires shall not be out for connecting to the terminals. All stands of wires shall be soldered at the end before connection. The connecting brass-

screws shall have flat ends. All looped joints shall be soldered and connected through terminal block/connectors.

Provide embossing on the sockets engraving “UPS” and “RAW”

CONDUITING & WIRING FOR TELEPHONE & COMPUTER SYSTEM

The rates for conduit work shall include:

1. All necessary specials and fittings.

2. M. S. inspection, junction and outlet boxes as required.

3. 3/5 mm thick perspex sheet covers for inspection & junction boxes.

4. All fixing accessories such as clips, nails, brass screws/brass washers, etc.

5. 2 mm dia G.I. pull wires in conduit work, wherever necessary.

6. Providing and fixing approved saddle, hooks and grouting the same as required in the case of all exposed conduit work.

7. Embedding conduit and allied fittings including the outlet boxes in walls, floors etc., during construction and/or in chases including cutting chases and making good with cement mortar as necessary in the case of concealed conduit work.

8. Painting all inspection, junction and outlet boxes.

9. PVC conduit for concealed conduit wiring.

10. Painting of Hylam /perspex sheet cover from inside to suit the colour of the surrounding wall with two coats of paint.

11. Supply and fabrication of G.I. outlet boxes.

12. The outlet cover plate for Telephone outlets shall be made of I.S.I. grade Urea Formaldehyde Moulding powder. The cost of outlets shall include the cost of cover plates, cadmium fixing screws etc. also.

13. Numbering of wires on both ends of the wires for easy identification with PVC ferrules.

EARTHING

The rates for earthing items include:

1. All fixing accessories such as brass saddles, brass screws, rawl plugs etc.

2. Jointing by riveting in case of copper earth strips (2 per joint) and by welding in case of GI strips.

3. Cutting chase, making holes and making good the same wherever required.

4. All masonry work including earth work for earthing stations, earthing tapes and wires.

5. Effecting adequate and proper interconnections.

6. Use of copper thimbles for all wire terminations in the Distribution Boards, switches and sockets.

CABLES, MAINS AND SUB-MAINS

The rates for all items of work shall include:

1. Embedding conduits and allied fittings in walls, floors, etc., during construction and/or in chases including cutting chases and making good as necessary in the case of concealed conduit work.

2. Providing and fixing approved saddles, hangers, trays etc., and grouting the same as required for exposed conduits where called for. Providing dash fasteners for the threaded MS down rods (primer coated) used for hanging the cable \trays.

3. Providing and fixing junction boxes with 5 mm thick ‘Hylam’ sheet covers.

4. Effecting adequate and proper connections at terminations.

5. Ensuring that provision is left in various buildings components and trenches as the work proceeds, for incorporation of cable supports at a later date.

6. Providing all fixing accessories such as clamping devices, nuts and bolts, screws etc.

7. Clamping to supports where laid in trenches.

8. Excavation of trenches and bringing the trenches to exact level as required.

9. Providing sealing compound, thimble, solder etc., at joints and terminations as called for.

10. Providing proper supports for cable terminal boxes as called for.

11. Wherever cables pass through walls, ceiling, paved area or below roads provide sleeves/ hume pipes and making good as necessary.

DISTRIBUTION BOARDS

The rates for the following items of work generally include:

1. The supporting rigid steel frame work.

2. 1.6 mm thick MS boxes complete with dust proof and vermin proof covers and locking arrangements, mounted flush with surfaces.

3. All fixing accessories such as dash fasteners, bolts, nuts, screws, etc. as required.

4. Building into masonry/concrete work including all necessary cutting and grouting with cement mortar 1:2.

5. Effecting adequate and proper connections.

6. Effecting proper bonding to earth.

7. Painting/lettering on switches and distribution boards the location they serve and providing on each board its circuit diagram.

8. Touching up all damaged paint over exposed work with one coat of red oxide primer and two finishing coats of approved synthetic enamel paint.

9. Main Distribution Board and Final Distribution Boards shall be fabricated by Vendor with the specified equipment.

Provide 6 Amps. SP MCB for Light Points Circuits, 20 Amps. SP MCB for Power Circuits and 32 Amps. SP MCB for 1.5 Ton AC Unit.

FIXING OF LIGHTING FIXTURES AND FANS

The rate for fixing of lighting fixtures and fans shall include:

1. Receiving the fixtures from the Owners' stores and assemble the same at site and testing the fixture before fixing.

2. All components that may be required to make the installation complete in all respects such as:

a. Suitable length of down rod, hanger and connecting wires, where called for.

b. Wires for connecting the fixtures to the point through connector blocks.

c. All wood and metal blocks to serve as base of fixtures.

d. Bonding with common earth wires.

3. Drilling holes in supports where required.

4. Fixing clamps, GI bolts and nuts, clips, brass screws, dash fasteners and other fixing accessories as required, including leaving necessary provision for fixing at time of concreting.

5. Approved enamel painting for hanger rods, clamps and other components and fixing accessories as called for.

6. Testing and commissioning of all fixtures and fans after installation.

7. The lighting fixtures shall be suitable for 230 Volts, single phase 50 cycles A.C. supply system.

Incandescent lamps shall be 100 Watts (maximum) and fluorescent lamps shall be 18 watts and 36 watts.

9. Use G.I. suspenders and clamping to the slab with dash fasteners (4 per fitting), including turn buckle arrangements for adjustable heights for hanging. They should be the same suspenders as used for hanging the False Ceiling grid ceiling.

The Vendor to mark the size of light fittings, speaker and fire alarm components on the false ceiling for the interior Vendor to cut holes.

11, GENERAL SPECIFICATION FOR TOILET AND PLUMBING WORK

SECTION - I

1. SANITARY FIXTURES & FITTINGS

1.1 Vitreous China Sanitary ware

All glazed Vitreous China Sanitary ware fixtures shall confirm to Indian Standard IS: 2556. The details, make and type to be provided are given in the Schedule of Quantities. The Vitreous China Sanitary ware shall be of first quality only. They shall be non-porous and fully vitreous, with all the visible portions perfectly glazed and should be absolutely free from hairline cracks pinholes and local depressions. It shall be perfectly symmetrical, uniform and with smooth curves. All sanitary fixtures and fittings shall be stored under covered roof and handled carefully to prevent any damage.

1.2 Chromium Plated Fittings

All Chromium plated fittings shall be of brass/copper, heavy chromium plated, of the make and design approved by the Architects/Consultants. The fittings shall be cast fittings of screw type, machined and threaded properly for fixing to the supply pipes.

The chromium plating shall conform to Indian Standard IS: 482 (Electroplated coating of nickel and chromium of copper and copper alloys).

The fittings shall be supplied complete with chromium plated matching flanges wall cover plates, nuts and extension pieces of required lengths. Metallic washers where required shall also be of chromium plated brass. All bib cocks and stop cocks shall conform to Indian Standard IS: 781. Brass screw down pillar taps to IS: 1701 and all other fittings shall match the supply fitting in construction and appearance. All fixing accessories and screws shall be similar to fittings. All washers shall conform to Indian Standard IS: 4346.

All waste fittings (Waste, Chain, Overflow, Spreaders Caps etc.) shall be of brass/copper heavy chromium plated of the make and design specified and match the supply fittings. They shall con-form to Indian standard IS: 2963.

Bottle traps (for wash basins, sinks, urinals etc) shall be deep seal (Min. 6 cm seal) cast brass bottle traps, heavy chromium plated. All bottle traps shall be provided with suitable cleaning eye, extension piece, flare nuts, all chromium plated.

Chromium plated brass flanges of suitable size shall be provided to screw the holes made for installing the pipes through walls, floors & columns.

2.0 INSTALLATION OF SANITARY FIXTURES AND FITTINGS

2.1 General Requirement

The fixtures and fittings shall be provided with all such accessories as are required to complete the item in satisfactory working conditions, whether specifically mentioned or not in the schedule of quantities, specifications and drawings.

The sanitary fixtures and fittings shall be installed at the correct assigned position as shown on the drawings and as directed by the Owner / Architect / Interior Designer, and shall fully meet with the aesthetic and symmetrical requirements as demanded by the Architect / Interior Designer.

All fixtures and accessories shall be fixed in accordance with a set pattern matching the tiles or interior finish as per Owner / Architect / Interior Designer requirements. Wherever necessary, the fittings shall be centered to dimensions and pattern as called for.

Fixtures & fittings shall be installed by skilled workman with appropriate tools according to the best trade practice. Manufacturer's instructions shall be followed for the installation of fixtures. Fixtures in all toilets shall be standard height mounting as specified/shown for on the drawings. Fixtures shall be mounted rigid, plumb, and true to alignment.

2.2 Mock up and Trial Assembly

The installation of the Sanitary fixtures and fittings shall be as per the shop drawings approved by the Owner / Architect / Consultant.

The Vendor shall have to assemble for Mock Up atlas one set of each type of sanitary fixtures and fittings in order to determine precisely the required supply and disposal connections. Relevant instructions from manufacturers shall be followed as applicable. This trial assembly shall be developed to facilitate determining the location of puncture holes, holding devices etc., which will be required for final installation in position of all sanitary fixtures and fittings. The above assembly shall be subject to final approval by the Owner / Architect / Interior Designer.

The fixtures in the trial assembly can be re-used for final installation without any additional payments for fixing or dismantling of the fixtures.

2.3 Supporting and Fixing Devices

The Vendor shall provide all supporting and fixing devices necessary to install the sanitary fixtures and fittings securely in position. The fixing devices shall be rigidly anchored into the building structure. The devices shall be rust resistant and shall be so fixed that they do not present an unsightly look in the final assembly. Where the location demands, the Owner/ Architect / Interior Designer may instruct the Vendor to

provide chromium plated or other similarly finished fixing devices. In such circumstances the Vendor shall arrange to supply the fixing devices and shall be installed complete with appropriate vibration isolating pads, washers and gaskets.

2.4 Final Installation

The Vendor shall install all sanitary fixtures and fittings in their final position in accordance with approved trial assemblies and as shown on drawings. The installation shall be complete with all supply and waste connections. The connection between building and piping system and the sanitary fixtures shall be through proper unions and flanges to facilitate removal/replacement of sanitary fixtures without disturbing the built in piping system. All unions and flanges shall match in appearance with other exposed fittings.

Fixtures shall be mounted rigid, plumb and to alignment. The outlets of water closet pans and similar appliances shall be examined to ensure that outlet ends are butting on the receiving pipes before making the joints. It shall be ensured that the receiving pipes are clear of obstruction. When fixtures are being mounted, attention shall be paid to the possibility of movement and settlement by other causes.

3.0 PROTECTION AGAINST DAMAGE

The Vendor shall take every precaution to protect all sanitary fixtures against damage, misuse, cracking, staining breakage and pilferage by providing proper wrapping and locking arrangement till the completion of the installation. At the time of handing over, the Vendor shall clean, disinfect and polish all fixtures and fittings. Any fixtures and fittings found damaged, cracked chipped stained or scratched shall be removed and new fixtures and fittings free from defects shall be installed at his own cost to complete the work.

SECTION - II

INTERNAL DRAINAGE (SOIL, WASTE, VENT AND RAIN WATER PIPES).

1. BASIC PIPING SYSTEM

Soil and waste Pipes shall be cast iron pipes & fittings as called for. In general wastes smaller than 65mm dia shall be of heavy class Galvanized MS. All rain water pipes shall be class A uPVC pipes of SWR system.

The soil pipes shall be circular with a minimum diameter of 100mm. Pipes shall be fixed by means of stout cast iron clamps in two sections, bolted together, built into the walls, wedged and neatly jointed as directed and approved by the Owner / Architect

/ Consultant. All bends, branches, swan neck and other parts shall conform to the requirement and standards as described for the pipes. Pipes shall be rested against the walls on suitable wooden cradles. Local Authority Regulations applicable to the installations shall be strictly followed.

Where indicated, the soil pipes shall be continued up wards without any diminution in its diameter, without any bend or angle to the height shown in the drawings. Joints throughout shall be made with molten lead as described under jointing of cast iron pipes. Soil pipes shall be painted as provided under 'painting'. The soil pipes shall be covered on top with cast iron terminal outlets as directed and approved. All vertical soil pipes shall be firmly fixed to the walls with properly fixed clamps, and shall as far as possible be kept 50mm clear of wall. Waste pipes and fittings shall be of cast iron or galvanized mild steel pipes. Pipes shall be fixed. jointed and painted as described in installation of soil, Waste & vent pipes.

Every waste pipe shall discharge above the grating of a properly trapped gully. The Vendor shall ensure that this requirement is adequately met with. Wherever floor traps are provided, it shall be ensured that atleast one wash is connected to such floor traps to avoid drying of water seal in the trap. All the fittings used for connections, between soil, waste and ventilation pipes and branch pipes shall be made by using pipe fittings with inspection doors for cleaning. The doors shall be provided with 3mm thick rubber insertion packing and when closed and bolted shall be air and water tight.

2.0 PIPING MATERIALS

2.1 Cast Iron Pipes

Cast iron pipes and fittings shall be good tough quality, dark Grey on fracture. The pipes and fittings shall be true to shape smooth and cylindrical, their inner and outer surface being as nearly as practicable concentric. They shall be sound and nicely cast, shall be free from cracks, taps, pinholes and other manufacturing defects.

The pipes and fittings shall conform to IS:1729 or IS:3989 as called for. All fittings shall conform to relevent BIS codes. Fittings shall be of required degree with or without access door. All access door shall be made up with 3mm thick insertion rubber gasket, white lead, and tightly bolted to make the fittings air and water tight. The fittings shall be of the same manufacture of the pipes used for soil and waste.

All HCI pipes and fittings shall bear the manufacturer's name and ISI specification to which it conforms.

All pipes and fittings shall be coated internally and externally with the same material at the factory, the fittings being pre-heated prior to total immersion in a bath containing a uniformly heated composition having a tar/other suitable base. The coating material shall have good adherence and shall not scale off. The coating shall be smooth and tenacious and hard enough not to flow when exposed to a temperature of 77 degree C but not so brittle at a temperature of '0' degree C as to chip off when scratched lightly with a pen knife.

All pipes and fittings before installation at site shall be tested hydrostatically to a pressure of 0.4 Kg/sq. cm without showing any sign of leakage, sweating or other defects of any kind. The pressure shall be applied internally and shall be maintained for not less than 15 seconds. All these tests shall be carried out in the presence of the representative of the Construction Manager / Architects. Alternatively a test certificate from manufacturers is obtained before dispatch of material to site.

2.2 Cast Iron Specialties

Cast iron specialty item such as deep seal floor traps, urinal traps, trap integral pieces with integral inlet/outlet connections manhole cover with frame, chamber cover etc. shall be fabricated to suit individual location requirements. The Vendor shall arrange the fabrication of these items from an approved source. All traps shall have minimum 6cm deep seal shall be supplied with cast iron caps and collar capable of receiving a screwed grating.

2.3 Galvanized Iron Pipes

Waste pipes below 65mm dia and where specified for shall be galvanized iron pipes screwed and scooted conforming to the requirements of IS:1239 of heavy grade. The pipes and sockets

shall be cleanly finished, well galvanized in and out and free from cracks, surface flaws laminations and other defects. All screw thread shall be clean and well cut. All pipes and fittings shall bear manufacturer's trade mark and conform to the IS as specified.

2.4 UPVC Pipes and Fittings:

The pipes shall be round and shall be supplied in straight lengths with scooted ends. The internal and external surfaces of pipes shall be smooth, clean, free from grooving and other defects. The ends shall be cleanly cut and square with the axis of the pipe. The pipes shall be designated by external diameter and shall conform to SWR pipe system.

3.0 INSTALLATION OF SOIL, WASTE, VENT AND RAIN WATER PIPES.

Soil, waste & vent pipes in shafts, under the floors etc shall consist of cast iron pipes as described earlier. Waste pipes from bottle trap to floor/urinal traps for wash basin, urinal and sink shall be of heavy class GI pipes and fittings. All horizontal pipes running below the slab and along the ceiling, shall be fixed on structural adjustable clamps, sturdy hangers of the design as called for in the drawings. The pipes shall be laid in uniform slope and proper levels. All vertical pipes shall be truly vertical fixed by means of stout clamps in two sections, bolted together, built into the walls, wedged and neatly jointed. The branch pipes shall be connected to the stack at the same angle as that of fittings. All connections between soil, waste and ventilating pipes and branch pipes shall be made by using pipe fittings with inspection doors for cleaning. Pipes shall be fixed in a manner as to provide easy accessibility for repair and maintenance and shall not cause obstruction in shafts. Where the horizontal run of the pipe is long or where the pipes cross over building expansion joints etc., suitable allowance shall be provided for any movements in the pipes by means of expansion joints etc., such that any such movement does not damage the installation in any way. All cast iron pipes and fittings shall be jointed with best quality soft pig lead free from all impurities.

Before joining, the interior of the socket and exterior of the spigots shall be thoroughly cleaned and dried. The spigot end shall be inserted into the socket right upto the back of the socket and carefully centered by two or three laps of threaded spun yarn, twisted into ropes of uniform thickness, well caulked into the back of the socket. No piece of yarn shall be shorter than the circumference of the pipe. The jointed pipe line shall be at required levels, and alignment. The reminder of the socket is left for the lead caulking. Where the gasket has been inserted tightly home, a jointing ring shall be placed round the barrel against the face of the socket. Molten pig lead shall be poured to fill the reminder of the socket in one pouring. The lead shall then be solidly caulked with suitable tools by hammering right round the joints to make up for the shrinkage of the molten metal on cooling and preferably finish 3mm behind the socket face.

The depth of the lead joints for the cast iron pipes shall be 45mm for the pipes upto 100mm dia and 50mm for the pipes beyond 100mm dia respectively. Twenty percent variations shall be permissible in accordance with IS: 3114.

The jointed portion of the pipe shall be carefully leveled & aligned and the joint shall not be covered till the pipe line has been tested under pressure.

4.0 Cutting and Making good:

Pipes shall be fixed and tested as building proceeds. The Vendor shall provide all necessary holes, cutouts and chases in structural members as building work proceeds. Wherever holes are cut or left originally they shall be made good with cement concrete 1:2:4 (1 cement:2 coarse sand:4 stone aggregate 20mm nominal size) or cement mortar 1:2 coarse sand). Cured and the surface restored to original condition.

Painting:

All M.S. Hangers shall be painted as per the shade & colour approved by the Project Manager.

Testing:

Before use at site, all u.P.V.C. soil pipes shall be tested by filling up with water for at least 10 minutes. After filling, pipes shall be inspected for below holes and cracks. All defective pipes shall be rejected and removed from the site within 48 hours. Pipes shall be tested after installation by filling up the stack with water. All opening and connections shall be suitably plugged. The total head in the stack shall however not exceeds 3 M. Alternatively, the Vendor may test all soil and waste stacks by a smoke testing machine. Smoke shall be pumped into the stack after plugging all inlets end connections. The top end shall however be left open. The stack shall then be observed for leakage's and all defective pipes and fittings removed or repaired as directed by the Project Manager.

A test register shall be maintained and all entries shall be signed and dated by the Vendor and the Project Manager or his representative.

SECTION - III

B. WATER SUPPLY

1.0 PIPING SYSTEM.

The piping system consists of SDR 11 Grade CPVC pipes and fittings conforming to relevant IS codes. The sizes and makes is specified in the Schedule of Quantities.

For any internal works if specified in the B.O.Q. the CPVC pipes and fittings shall be embedded in the wall chase or run on the floor / ceiling unless otherwise specified. No unsightly exposed runs shall be permitted.

2. PIPING MATERIAL

2.1 CPVC Pipes

The pipes shall be CPVC pipes & shall be uniform, adherent reasonably smooth and free from any imperfections. The pipes and sockets shall be cleanly finished, All screw threads shall be clean and well cut. The ends shall be cut cleanly, and square with the axis of the pipe.

The fittings also shall be SDR 11 Grade CPVC. The sizes of pipes and fitting is specified in the schedule of quantities.

2.2 Valves & Controls

All valves (gate, ball, check, safety) shall be of CPVC suitable for the particular service as called for. All valves shall be of the particular duty and design as called for.

3. LAYING AND JOINTING OF PIPES

All pipes and fittings shall be fixed truly vertical and horizontal unless unavoidable. The pipes shall be fixed to walls with standard slotted angles `U' shape threaded bolts, nuts for clamping pipes to angles. Slotted angles shall be grouted to R.C.C. work with dash fasteners. These slotted angles shall be spaced at regular intervals in straight lengths and heights at 1.8M c/c.

3.1 Laying and jointing of pipes

The galvanized pipes and fittings shall run in wall chase or ceiling or as specified. The fixing shall be done by means of standard pattern holder bat clamps keeping the pipes about 1.5 cm clear of the wall where to be laid on surface. Where it is specified to conceal the pipes, chasing may be adopted or pipes fixed in the shafts, ducts etc. provided there is a sufficient space to work on the pipes with the usual tools. As far as possible, pipes may be buried for short distances provided adequate protection is given against damage and where so required special care to be taken at joints. Where directed by the Construction Manager/Architect, Pipe sleeves shall be fixed at a place the pipe is passing through a wall or floor for reception of the pipe and allow freedom for expansion and contraction and other movements. In case of pipe is embedded in walls or floors it should be of approved quality. Under the floors the pipes shall be laid in layer of sand filling.

CPVC pipes shall be jointed with male & Female joints, using Solvent Adhesive. shall be taken to remove any burr from the end of the pipes jointing compound of proprietary make shall be used, according to the manufacturer's

instructions. Pipes and joints laid for water supply shall be tested to a pressure of 7 Kg. per Sq. cm.

3.2 Cutting Chases in Masonry Walls

The chases upto 7.5 x 7.5 cm shall be made in the walls for housing water supply pipes etc. These shall be provided in correct positions as shown in the drawings or directed by the Construction Manager/Architects. Chases shall be made by chiselling out the masonry to proper line and depth. After GI pipes etc are fixed in chases, the chases shall be filled with cement mortar 1:2:4 or as may be specified made flush with the masonry surface. The concrete surface shall be roughened with wire brush to provide a key for plastering.

3.3 Water Fittings

Unless otherwise specified all Gunmetal fittings such as gate, globe, check & safety valves shall be fitted in pipe line in workman like manner. Necessary unions shall be provided on both ends of the valves for easy replacement. The joints between fittings and pipes shall be leak-proof when tested to a pressure. The defective fittings and joints shall be replaced or redone.

SPECIFICATIONS/BRAND NAMES of materials and finished approved by the Architect/Company are listed below: However equivalent materials and finished of any other specialized firms may be used , In case it is established that the brands specified below are not available in the market are subject to the approval of the alternative brand by the Architect.

LIST OF APPROVED MAKES FOR CIVIL & INTERIOR WORK

	ITEM	DESCRIPTION
	REINFORCEMENT STEEL	Shall be TISCON 42 TATA iron & steel Co. Ltd. Or SAIL. Sail, Tisscon, Ispat, Tata

	CEMENT	Shall be OPC(ordinary Portland cement) 53 grade manufactured by Larsen & Turbo Ltd. i)Shriram Cement by M/S Shriram Industries Ltd. ii) A.C.C. Cement by Associated Cement Companies Ltd. Ultratech, JK cement, Ambuja cement. Pozzolona cement shall not be used.
	POLYSULPHIDE SEALANT	Shall be PIDISEAL by M/S PIDLITE INDUSTRIES LTD.
	WATER PROOFING COMPOUND	CICO , SIKA, Pidilite or equivalent
	SHUTTERING PLYWOOD	Shall be Indian Plywood Manufacturing Co. Bombay or Swastik by Sudershan Plywood .
	TOUGHENED GLASS	TRUTUF, Saint Globin, Indo Ashi, Modi or equivalent
	GLASS	Clear glass shall be MODI FLOT GLASS PVT. LTD. Or St. Gobain.
	WIRED GLASS	Shall be 6mm thk. Wired glass manufactured by Hindustan Safety Glass Works Ltd. Calcutta, Or Vallabh Glass Works Gujrat./HARYANA SHEET GLASS.

	WHITE CEMENT	J.K. WHITE CEMENT BIRLA WHITE CEMENT
	DISTEMPER, PAINT	Shall be first quality ENAMEL, PLASTIC EMULSION manufactured by PAINTS AND PRIMER BERGER PAINTS , ASIAN PAINTS SHALIMAR PAINT
	PUTTY	Shall be gold size Putty by SHALIMAR PAINTS LTD./ASIAN PAINTS.
	EXPANSION BOLTS FOR FIXING	Shall be DASH FASTENERS of appropriate size by HILTI OR M/S. DEV ASHISH TRADES OR APPROVED EQ. NEW DELHI.
	WINDOW HARDWARE	Ozone, Doorset, Hettich, or equivalent, Approved by Architect.
	CERAMIC TILES	KAJARIA, Nitco, Somany, HR Johnson, Nitco, ASL Or equivalent
	VINAYL FLOOR	ARMSTRONG/ RIKVIN, Gerfloor, Eurotech,
	VETRIFIED TILES	NITCO, KAJARIA, MARBITO, HR Johnson, ASL or equivalent
	GLAZED TILES	JHONSAN /KAJARIA /BELL /SOMMANY.
	SPECIAL CERAMIC TILES	Saraswati Ceramics, Sarai Rohilla or other approved pottery in Delhi/Khurja (RAJA).

	HINGES AND DRAWER SLIDE	KAFF, HETTICH, OZONE.
	LOCKS, HANDLES	GODREJ,Haffel, Hettich,Ebco, DORSET, DOORMA, or Eq. Approved by Architect.
	DOOR CLOSERS, FLOOR SPRING	EVERITE, DORSET, OZONE, Dorma, Enox,Ebco,Hamco or Eq. Approved by Architect.
	ALUM, TOWER BOLTS	ECIE, PARMAR, EVERITE or Eq. Approved By Architect.
	M.S. PIPES (RAILING)	JINDAL OR PRAKASH.
	FLUSH DOORS	NATIONAL, SHARDA PLYWOOD IND. , MYSOBOARD, Century, Archidply, Greenply, Kitply, Anchor, Orchid, Prince.
	LAMINATE DECORATIVE LAMINATE	MARINO, FORMICA, GREENLAM, ARCHIDLAM NATIONAL, DURIAN ,AND VENTURA
	PLYWOOD, BLOCK BOARD ,	CENTUARY, GREEPLY, ASIAN, ARCHID, Marino
	STRUCTURAL STEEL	SAIL, TISCO.

	MINERAL FIBRE ACCOUSTIC CEILING FOR FALSE CEILINGS / FIBER CEMENT BOARD	ARMSTRONG / USG / BORAL EVEREST INDUSTRIES LTD.
	M.S. ALUMINIUM LINEAL CEILING	INTERARCH, VISTA.
	VENETIAL BLINDS. channel	TRAC, VISTA, MAC.
	GYPBOARD CEILING	INDIA GYPSUM., St. GOBAIN, ASIA
	HEAT REFLECTIVE FILM	GARWARE OR APPROVED EQ.
	TILE ADHESIVE	FOSROC, EUROKART, BALENDURA, LATICRETE, PEDILITE,
	G.I.PIPE AND FITTINGS	TATA, JINDAL, APPOLO
	WOOD PRESERVATIVE	WOOD GUARD OR APPROVED EQ/ICI.
	ALUMINIUM WINDOWS	ALUK SYSTEM , Schuko , Alcove Infratech,
	C.I./R.W.P. PVC PIPE	RIF,IIS OR EQ. Prince, Astral or equivalent

	SANITARY WARE	HINDWARE, CERA,PARRY WARE,
	STAINLESS STEEL SINK	DIAMOND , NIRALI
	Silicon paint.	M/s Pidilite Industries Limited, Roff-Hypel, Product code 224.

LIST OF APPROVED MAKES FOR ELECTRICAL, AC AND PLUMBING

	Details of Materials	Manufacturers Name
	Light Fittings , fixtures, lamps	Philips / Wipro / Osram / Havells / TISVA.
	MCCB, MCB , RCCB, DB, ICTPN TP, HRC Fuse, cahnge over switch, switch fuse Unit	L&T, ABB, Legrand, Siemens, Schneider
	FRLS insulated Elec. Wire/ cable armourd, unarmourd, Sheathed,unSheathed, flexible LT cable, Multi core, single core cable, flat cable	Finolex/Ploycab/Havells/RR kabel/KEI
	PVC conduit(HEAVY DUTY ONLY)	CAP/Finolex/Polycab
	PVC insulated copper conductor Wires	Finolex/ Polycab/RR Cable
	MCB & MCCB	Legrand/ Schneider/ ABB/Siemens/L&T
	Distribution Box	Legrand/ Schneider/ ABB/Siemens
	Bus bar	Jindal/ Indalco/ Century
	M.S. CONDUITS AND ACCESSORIES	BEC /AKG /ESC
	HT cable	Polycab/Havells
	Modular Switches, Sockets	ABB/ Legrand/ MK/ANCHOR/ELLEYS/ROMA

	DLP Trunking	Legrand/Schneider or equivalent
	Power cable	CCI/ Skytone/ Universal/ LAPP/ Torrent
	End Termination	Raychem/ Mahindra/ELMEX
	PANEL	Crompton/L&T/C&S
	Fan	Crompton/Havells/Bajaj/Usha
	Casing Caping	Finolex/Cap or equivalent
	Weather proof socket outlet with MCB	ABB/MDS/LEXIC/Neptune/Elcon - Clipsil, Siemens, Schneider (Merlin Gerin)
	Miniature Circuit Breaker	ABB/MDS/LEXIC/ Clipsil/Siemens/HPL
	Earth Leakage Circuit Breaker	MDS/LEXIS/Siemens/HPL
	LT Cables / Control Cables	Skyton/ Finolex/polycab
	MCB Distribution Boards in sheet steel housing (double door)	ABB/MDS/LEXIC/Siemens/HPL
	Distribution	
	MV Vendor/Timer/Relays/Starters	Legrand/ Schneider(MG)/ ABB/Siemens/L&T
	Moulded case circuit breakers	Legrand/ Schneider(MG)/ ABB/Siemens/L&T
	SFU/Fuses	HPL/ L&T. Siemens, GE Power, Schneider (MG)
	ACB	Schneider(MG)/ ABB/Siemens/L&T
	Single Phase Preventer (Current base)	L&T, Minilec
	Raising Mains & Tap Off (Power coated)	Zeta, C&S, Siemens
	MV Switcheboards (Powder Coated)	Tricolite Electrical Industries, conlec Enginners Pvt. Ltd, Vidyut Control Pvt Ltd., Trinitron Milestone Switchgear, Unilec Ltd, Madhu Electrical Advance Electro Control Pvt Ltd.

	Low Tension System	
	Light & Fan Wire	Polycab, Finolex, Havells
	Telephone Wires	Delton, Skyline, Finolex, Rallison, Batra Henley
	Telephone Tag Blcoks	Krone / Pouyet/ TVS
	Cables and Accessories	
	1100Volts grade Cables	CCI, Universal, Fort Gloster, Polycab, RPG (Asian), Nicco
	Cable Lugs	Dowells
	Cable compression Glands	Peeco/ Comet, Stripwell, Siemens
	MV Panels(TTA)	Siemens Cpan/ ABB R2K/ Schneider Blockset
	Copper Conductor Communication / Signal Cable	Bon Ton/Finolex/ Skytone/polycab
	Metering & Protection	
	Cast Resin current transformers	Gilbert Maxwell, Kappa AE,Precise
	Meters (Digital)	L&T Roshab, Automatic Electric, Siemens, Socomex
	Selector switches	HPL/L&T Salzer, Kaycee
	Indication lamp	L&T Vaisno Teknic
	KWH Electronics Digital Meter	Secure, L&T, Enercon, Socomec-HPL
	Electrical Items	
	Panel Switch Gear & related Item	
	LT Panel/Bus Duct	By any Panel manufacturer who process C.P.R.I. certificate for specified fault level & IP level protection
	Fuse Disconnector switch/switch fuse unit	L&T, Siemens/ Schneider/ABB/Legrand
	Ammeter Voltmeter	AE/L&T/MECO/Rishab

	Digital Meters/ Intelligent Maultifuntional Digital mater	AE/HPL/CONZERV
	Selector Switch, Push button switch / emergency switch	KAY CEE/ L&T/ Siemens/ Schneider
	Indication Lamp	AE/L&T/Siemens/ Schneider
	CT's	L&T / AE/ Kappa
	AT's	L&T/Siemens/ Schneider/ legrand
	Voltage stabilizer for air conditioner (4/5KVA)(170-270V)	V Guard/Microtek
	Air Conditioner - Split Inverter AC(5 star)	Daikin/Blue Star/ Carrier
	insulation for refrigerant pipe	Armacell / Urobatex /vidoflex
	Copper refrigerant pipe	Rajco/Mandev
	PLUMBING WORK	
	Sanitary ware	Hindware / Jaquar /Parry ware/ or equivalent
	Concealed Cisterns	Hind ware , Jaquar
	C.P. Fittings	Jaquar/ Hindware or equivalent approved
	Cockroch Traps	Cammary/ Chilly
	S.C.I. Pipes & Fittings	S.K.F./NICO
	PVC. CPVC AND UPVC Pipes & Fittings	IS 4985 Supreme, Pince / Astral equivalent
	Manhole Covers & Frame SFRC	KK Manholes
	S.S. Pipes & Fittings	Kamdhenu/Jindel
	Ball valve	Zoloto/A.P.I.
	Valves above 50 mm Dia	Zoloto/A.P.I.
	G.I. Pipes	Jindal class B, Tata , Zenith or equivalent
	G.I. Fittings	Unik
	S.S. Sink	Nirali, Diamond or equivalent
	Pump	Grondfoss / Wilo
	Geyser	Bajaj / Sphere Hot / Crompton /Racold / V Guard / Havells

The names of manufacturers are mentioned in order of preference. The Vendor shall quote rates for materials of first preference only and that the Vendor has satisfied himself regarding the availability of the materials and that only materials called for under first preference shall be supplied and installed. In the event of the materials of makes called for are not available and alternative makes are approved (by the consultant) for incorporation in the work, the rates quoted shall be suitably amended based on the price variation between the specified makes and alternative makes on the day the alternative makes are accepted.

Bill OF QUANTITIES AND TENDER DRAWINGS ATTACHED

Signature of the Bidder/s

With the Seal of the Company

Date:

ANNEXURE J: DRAFT SERVICE AGREEMENT

(To be submitted by the Successful Bidder after issue of Letter of Award)

This **SERVICE AGREEMENT** ("**Agreement**") is made and entered into on this the [•] day of [•] Two Thousand and Twenty [___/[___]/2025), BY AND BETWEEN:

ECGC Ltd., a Public Sector Enterprise wholly owned by Government of India, having its registered office at ECGC Bhawan, CTS No. 393, 393/1 to 45, M.V. Road, Andheri (East), Mumbai-400069 (hereinafter referred to as the "**Company**"/ "**ECGC**"/ "Employer", which term shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors-in-interest and permitted assigns), of the ONE PART;

AND

SERVICE PROVIDER, a company/ firm/ proprietorship incorporated under the Indian Companies Act, 1956, having its registered office at ' --------- '(hereinafter referred to as the "**Vendor**"/ "**Contractor**", which term shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors-in-interest and permitted assigns), of the OTHER PART.

Company and the Service Provider shall hereinafter jointly be referred to as "Parties" and individually as a "Party"

WHEREAS:

1. The Company is, *inter alia*, engaged in the business of providing export credit insurance to Indian exporters and banks;

2. The Service Provider is, *inter alia*, involved in the business of providing…….

3. The Company floated NOTICE INVITING TENDER (‘**NIT’**) Document having reference: **ECGC/……..** (hereinafter also referred to as ‘the Bid Document’ or ‘the Tender Document’) (Attached as Annexure – I to this Agreement).

4. The Service Provider has become the successful bidder in the said NIT and the Company has selected the Service Provider to do Repair, Renovation (Civil work), Interior works and allied Plumbing and Electrical Works) at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad Uttar Pradesh, Pin Code- 244001and the Service Provider has agreed to provide the services, as they have the required skills and personnel.

NOW THEREFORE, in consideration of the mutual covenants, terms and conditions and understandings set forth in this Agreement, the Parties with the intent to be legally bound hereby agree as follows:

5. Definitions

In this Section, the following terms shall be interpreted as indicated herein below:

i. “Architect” means the Architect appointed by ECGC Limited for this project.

ii. “The Company” means ECGC Limited.

iii. “Vendor”/ “Contractor” is the successful Bidder whose financial Bid has been accepted and to whom notification of award has been given by the Company.

iv. “The Services" means the scope of services which the Vendor is required to provide to the Company under the Contract.

v. “The Contract” means the agreement entered into between ECGC and the Vendor, and signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein;

vi. “The Contract Price” means the price payable to the Vendor under the Contract

for the full and proper performance of its contractual obligations;

i. "The Project" means Repair, Renovation (Civil work), Interior works and allied Plumbing and Electrical Works) at HIG A-1 & A-9, Ram Ganga Vihar, Phase-I, Moradabad Uttar Pradesh, Pin Code- 244001

ii. "The Project Site" means designated locations of the Company as may be specified in the Contract.

iii. "Departmental Schedule" means the (i) Public Works Department Schedule of Rates in Uttar Pradesh; (ii) the Latest edition of the book published for the specification of various works by CPWD.

iv. "Drawings" means the graphical representation of the design and execution of the Project, the components, framework, and dimensions prepared by the Architect in consultation with the Vendor within seven (7) days from the date of acceptance of the tender award letter.

v. "Start date" means the date of start of the work; which shall be seven (7) days from the date of acceptance of the tender award letter.

vi. "Site Engineer" means the person posted at the site who shall be appointed by the Architect and will work under the orders of the Architects and the Company to inspect the works.

vii. "The works" shall mean the work or works to be executed or done under this contract.

viii. "The Bill of Quantities" (BOQ) shall mean the schedule of quantities as specified and forming part of this Notice Inviting Tender.

ix. "Priced Bill of Quantities" (BOQ) " shall mean the schedule of quantities duly priced with the accepted quoted percentage of the contractor.

A Terms and Conditions of the Contract are provided hereinafter: Scope of Work

1. The Scope of Work includes Repair, Renovation (Civil work), Interior works and allied Plumbing and Electrical Works) at HIG A-1 & A-9, Ram Ganga

Vihar, Phase-I, Moradabad Uttar Pradesh, Pin Code- 244001 as per details given in accordance with the "Specifications" and "Schedule of Quantities" in **Annexure I** and as per the Drawings.

2. The Vendor shall provide everything necessary for the proper execution of the work according to the intent and meaning of the drawings, schedule of quantities and specifications taken together whether the same may or may not be particularly shown or described therein provided that the same can reasonably be inferred therefrom and if the Vendor finds any discrepancies therein, he shall immediately and in writing refer the same to the Company whose decision shall be final and binding.

3. The rates quoted against individual items are inclusive of everything necessary to complete the said items of work within the contemplation of the contract and beyond the unit price. It includes furnishing all materials, labour, tools, equipment, Municipal Fees for water supply, Royalty on road materials (if any), electricity and other charges of Municipalities or statutory local bodies, all statutory and levy/ cess, transportation charges required for carriage and supply of materials, Toll charges, loading and unloading charges, handling charges, overhead charges, taxes applicable, etc. and its management necessary for, and incidental to, the construction and completion of the work. All work, during its progress and upon completion shall conform to the lines, elevations and grades as shown on the drawings furnished by the Architect. Should any detail essential for the efficient completion of the work be omitted from the drawings and specifications it shall be the responsibility of the contractor to inform the Architect and to furnish and install such detail with the Company's concurrence, so that upon completion of the proposed work the same will be acceptable and ready for use. No extra claim in this regard beyond the specified rate as per the work schedule whatsoever in this respect will be entertained.

4. The Vendor shall provide and maintain proper sheds for the proper storage and adequate protection of the materials etc., and other work that may be executed on the site including the tools and materials and remove same on completion. No separate charges shall be paid for traffic control measures, shoring, shuttering, dewatering, curing etc. and the rates of respective items or works

are to be deemed as inclusive of the same.

5. Company may in their absolute discretion issue further drawings and/or written instructions, details, directions and explanations, which are, hereafter collectively, referred to as "the company's instructions" regarding:

a) The variation or modification of the design quality or quantity of works or the addition or omission or substitution of any work. Should the Vendor desire to substitute any materials and workmanship, he/they must obtain the approval of the Company in writing in advance.

b) Any discrepancy in the drawing or between the schedule of quantities and/or drawings and/or specifications.

c) The removal from the site of any defective materials brought thereon by the contractor and the substitution of any other material thereof.

d) The demolition/removal and/or re-execution of any work executed by the contractors.

e) The dismissal from the work of any persons deployed on the Project Site thereupon.

f) The opening up for inspection of any work covered up.

g) The rectification and making good of any defects under clauses hereinafter mentioned and those arising during the maintenance period (Defect Liability period).

No variation shall vitiate the contract.

6. The contractor shall forthwith comply with and duly execute any work comprised in instructions contained herein, provided always that verbal instructions, directions and explanations given to the Vendor or his representative upon the works by the Company shall if involving a variation be confirmed in writing to the Vendor/s within seven days. No works for which rates are not specifically mentioned in the priced schedule of quantities shall be taken up without prior written permission of the Company.

7. Rates of Extra items: Rates of Extra items shall be determined in the following order of preference whereby only when the first rate is completely ruled out, can the second rate be opted for and so on until the fourth rate which shall be the final rate if none of the preceding rates are found suitable.

First: - Similar comparable item rate quoted in the BOQ,

Second: - Similar nearest comparable item rate quoted in the BOQ,

Third: - Nearest comparable CPWD Schedule or rates/or practices.

8. Variation/Deviation: The price of all such additional items/non tendered items will be worked out on the basis of rates quoted for similar items in the contract wherever existing or on engineering rate analysis based on prevalent fair price of labour, material and other components as required. The tender rates shall hold good for any increase or decrease in the tendered quantities up to variation of 25% for variation beyond + 25%, the rate for the respective item may be received on mutually agreed terms.

9. No additional/supplementary work/item, other than work/items mentioned in the printed tender be carried out by the contractor without prior approval of the Architect and Company.

10. The Vendor shall deposit the policy and receipt for premiums paid with to ECGC along with the running bills. If the Vendor defaults and fails to obtain such an insurance, ECGC may on behalf of the Vendor obtain such insurance cover for the work and may deduct the amount of premium paid from any money due, or which may become due to the Vendor.

11. The Vendor shall not use modified/redirected old material of other projects.

12. The responsibility for stacking the serviceable materials (as per the decision of the Company/ Architect) obtained during the dismantling of existing structures/walls/tiles except those for disposing of under salvage value items & property/ materials of ECGC which are required to be handed over to ECGC lies with the Vendor and nothing will be paid on this account. In case of any loss or damage of serviceable materials before handing over the same to ECGC, full value will be recovered from the Vendor’s bill at rates as will be assessed

by the Architect.

13. The Vendor shall remove all unserviceable materials/debris obtained during execution at the place as directed. The Vendor shall dress up and clear the work site after completion of work as per the direction of the Architect. The debris shall be disposed of by the Vendor. No extra payment will be made on this account.

14. The under-noted records books at the site of work shall be maintained in addition to normal routine requirements by the contractor

(a) Daily progress record;

(b) Worksite order book;

(c) Instruction by the Company's Officers;

(d) Test registers of other materials/fittings fixtures equipment as stipulated in the tender;

(e) Register of drawings and working details;

(f) Logbook of defects;

(g) Hindrance register giving details of commencement and removal of each hindrance;

(h) Dismantled materials account to register;

(i) Supply and consumption register of scarce / costly materials like laminates special paints white cement, or any material as directed by the Architect or Company;

(j) Specifications C.P.W.D. & I.S.I. as applicable to the contract;

(k) IS 1200 relating to measurements;

(l) Conversion Table IS 786.

These Registers are to be signed by the Site Engineer as and when required.

12. The Vendor shall do photography/video photography of the site firstly before the start of the work, secondly mid-way in the execution of different stages of work and lastly after the completion of the work.

13. On completion of the works, the contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and the works clean and in a workmanlike condition to the satisfaction of the ECGC and Architects.

B Drawings and Programme of Work

1. The Vendor in consultation with the Architect shall prepare drawings of the work to be executed. All works shall conform with the drawings and scope of work and consultation with the project architect.

2. On finalizing the drawings, the Vendor shall furnish:

   a) Construction schedule showing all activities of work in detail and the form of a Bar Chart proposed to be completed within the stipulated period duly signed as token of acceptance.

   a) Details of equipment, Machinery and labour to be deployed on the work.

3. All the drawings relating to work given to the contractor together with a copy of the schedule of quantities are to be kept at the site and the Company & Architects shall be given access to such drawings or schedule of quantities whenever necessary. In case any detailed drawings are necessary, the contractor shall prepare such detailed drawings and/or dimensional sketches therefore and have it confirmed by the Company before taking up such work.

4. The contractor shall ask in writing for all clarifications on matters occurring anywhere in drawings, specifications and schedule of quantities or for additional instructions at least 10 days ahead from the time when it is required for implementations so that the Employer may be able to give a decision thereon.

5. Two copies of each of the drawings and one copy of each of the condition of contract specification tender preamble and bill of quantities will be provided

for the use of the Vendor who must satisfy himself as to the accuracy of the said copies in every detail, and make all other copies necessary for the conduct of the work.

6. One copy of each drawing or sketch furnished to the Vendor shall be kept at the Project Site and the Architect or Site Engineer or any person authorised by the Company shall have free access to the drawings and sketches whenever they desire

7. Before the actual commencement of work, the Vendor shall submit a programme of construction of work with methodology clearly showing the required materials, men and equipment.

8. Any ambiguity observed shall be brought to the notice of the Company and be executed after obtaining approval from the Company.

C Commencement of Work and Duration

The work will commence on the Start Date, which should be within 10 days from the date of the work order issue. The project, in accordance with the scope of work and drawings, must be finished within 90 days from the work order issue.

D Co-operation and safety

1. All work to be carried out by the Vendor shall be in close coordination with the Architect, Site Engineer and the Company. The Vendor shall at all times give access to workers employed by the Architect and officials of the Company or any men employed on the buildings and to provide such parties with proper sufficient and if required special scaffolding, hoists and ladders and provide them with water and lighting and leave or make any holes, grooves etc. in any work were directed by the Company as may be required to enable such workmen to lay or fix pipes, electrical wiring, special fittings etc. The quoted rates of the tenders shall accordingly include all these above-mentioned contingent works.

2. The work should also be carried out with due regard to the convenience of the common area users and other occupants of the building, if any. All arrangements and programmes of work must be adjusted accordingly. All

precautions must be taken for the protection of the public and the safety of any adjacent roads, streets, walls, houses, buildings, and all other erections, matters and things and the Vendor shall take down and remove any or all such scaffolding, etc. as occasion shall be required or when ordered to do so and shall fully reinstate and make good all matters and things distributed during the execution of works to the satisfaction of the Company/Architect. The Vendor must see that all damages to any property which, in the opinion of the Architect are due to the negligence of the contractor are promptly rectified by the Vendor at his own cost and expenses and according to the direction and satisfaction of the Architect.

3. The Vendor shall carefully execute the work without disturbing or damaging underground or overhead service utilities viz. Electricity, Telephones, Gas, Water pipes, Sewers, Lifts, etc. In case disturbances of service utilities are found unavoidable the matter should immediately be brought to the notice of the Architect and necessary precautionary measures as would be directed by the Architect shall be carried out at the cost and expenses of the Vendor. If the service utilities are damaged or disturbed in any way by the Vendor during the execution of the work, the cost of rectification or restoration of damages as would be fixed by the Architect concerned will be recovered from the Vendor.

4. The Vendor shall, throughout the execution and completion of the Works and the remedying of any defects therein:

(a) Have full regard for the safety of all persons and the Works.

(b) provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Architect for the protection of the Works and/or for the safety and convenience of its workers, the public and/or others,

(c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation,

(d) ensure that all lights provided by the Vendor shall be screened so as not to interfere with any signal light of the railways or with any traffic or signal lights of any local or other authority.

(e) The vendor should provide a Contractor with All Risks Policy as explained in this Tender document(s).

5. The Vendor shall not fix or place any placards or advertisement of any description or permit the same to be fixed or placed in or upon any boarding, gantry, or building structure other than those approved by the Company.

6. The Vendor shall give due notice to the Company and Architects whenever any work is to be buried in the earth, concrete or in the bodies of walls or otherwise becoming inaccessible later on, in order that the work may be inspected and correct dimensions taken before such burial, in default whereof the same shall, at the option of the Architect be either opened up for measurement at the contractor's expense or no payment may be made for such materials. Should any dispute or differences arise after the execution of any work as to measurements etc., or other matters which cannot be conveniently tested or checked, the notes of the Employer shall be accepted as correct and binding on the contractor.

7. The Vendor shall afford the Site Engineer every facility and assistance for examining the works and materials for checking and measuring work and materials. The Site Engineer shall have no power to revoke, alter, enlarge or relax any requirements of the contractor or to sanction any day work, additions, alterations, deviations, or omissions or any extra work whatever, except in so far as such authority may be specially conferred in written by the Company.

8. The Site Engineer shall have power to give notice to the contractor or his foreman of non-approval of any work or materials and such work shall be suspended or the use of such materials shall be discontinued until the decision of the Company is obtained. The work will from time to time be examined by the Architects, Nodal Officer on behalf of the Company and the Site Engineer. But such examination shall not in any way exonerate the contractor from the obligation to remedy any defects which may be found to exist at any stage of

the work or after the same is complete. Subject to the limitations of this clause the Vendor shall take instructions only from the Nodal Officer of the Company. Nodal Officer of the Company is to be kept informed about the progress of the work by the Site Engineer and Architect.

1.5 Authorized Representative of Vendor and Vendor's Employees

1. The Vendor shall not assign the agreement or subcontract any portion of the work. The whole of the works included in the contract shall be executed by the Vendor and the Vendor shall not directly or indirectly transfer or assign the contract or any part, share or interest therein nor, shall take a new partner without the prior written consent of the Company and no sub-contracting shall relieve the contractor from the full and entire responsibility of the contract or active superintendence of the work during their progress. The contractor, may, however, appoint and authorize a representative in respect of one or more of the following purposes only:

    a. General day-to-day management of work.

    b. To give requisition for Departmental materials, Tools etc., if any, to receive the same and sign hand receipts thereof.

    c. To attend measurements when taken by the ECGC's Officers and sign the records of such measurements which will be taken upon acceptance by the Vendor. The selection of the authorized representatives shall be subject to the prior approval of the concerned Architect in writing. Even after first approval, the Architect may issue at any subsequent date, revised directions without any reasons, about such authorized representative and the contractor shall be bound to abide by such directions.

2. The Contractor shall employ a technically qualified and competent workforce with the appropriate skill or ability to perform their job efficiently and who shall be available (by turn) throughout the working hours to receive and comply with instructions of the Employer/Architects.

3. The contractor shall employ local labourers on the work as far as possible. No labourers below the age of eighteen years and who are not Indian Nationals

shall be employed on the work.

4. Any labourer supplied by the contractor to be engaged in the work on day work basis either wholly or partly under the direct order or control of the Company or his representative shall be deemed to be a person employed by the contractor.

5. The Vendor shall arrange to provide first aid treatment to the labourers engaged in the works whenever required. He shall within 24 (twenty four) hours of the occurrence of any accident at or about the site or in connection with execution of the works, report such accident to the Company and also to the competent authority where such report is required by law.

6. Dismissal of Vendor's employees: The Vendor shall on the request of the Company immediately dismiss from works any person employed thereon by him who may in the opinion of the employer be unsuitable or incompetent or who may misconduct himself. Such discharges shall not be the basis of a claim for compensation or damages against the Company or any of its officers or employees.

E. Procurement, Quality, Approval and Rejection of Materials

1. All materials required to complete the execution of the work shall be supplied by the Vendor after procurement from an authorized and approved source. The contractor shall not use modified/redirected old material from other projects.

2. Samples of all materials to be supplied by the Vendor and to be used in the work shall have to be approved by the Architect and checking the quality of such materials shall have to be done by the Architect in consultation with the Company.

3. All materials and workmanship shall be in accordance with the specifications laid down in the Tender and the Architect reserves the right to test, examine and measure the materials/ workmanship directly at the place of manufacture, fabrication or the site of works or any suitable place. The Vendor shall provide such assistance, instrument, machine, labour and materials as the Architect may require for examining, measuring and testing the works and quality,

weight or quantity of materials used and shall supply samples for testing as may be selected and required by the Architect without any extra cost.

4. All the works specified and provided for in the specifications or which may be required to be done in order to perform and complete any part thereof shall be executed in the best and most workman-like manner with materials of the best and approved quality of the respective kinds in accordance with the particulars contained in and implied by the specifications and as represented by the drawings or according to such other additional particulars and instructions as may from time to time be given by the Company as proposed by Architect during the execution of the work, and to its entire satisfaction

5. Should the work be suspended by reason of rain, strike, lockouts or any other cause, the contractor shall take all precautions necessary for the protection of work and at his expense shall make good any damage arising from any of these causes.

6. The Vendor shall cover up and protect from damage, from any cause, all new work and supply all temporary doors, protection to windows, and any other requisite protection for the execution of the work whether by himself or special tradesmen or subcontractor and any damage caused must be made good by the contractor at his expenses.

7. The Company shall during the progress of the work have the power to order in writing from time to time the removal from the work within such reasonable time or times as may be specified in the order of any materials which in the opinion of the Company/Architect are not in accordance with specification or instructions, the substitution or proper re- execution of any work executed with materials or workmanship not in accordance with the drawings and specifications or instructions. In case the Vendor refuses to comply with the order the Company shall have the power to employ and pay other agencies to carry out the work and all expenses consequent thereon or incidental thereto as certified by the Company shall be borne by the Vendor or may be deducted from any money due to or that may become due to the Vendor. No certificate which may be given by the Architects shall relieve the Vendor from his

liability in respect of unsound work or bad materials.

8. Any cement/ equipment/ basic material lying at the Vendor's custody which is found at the time of use to have been damaged shall be rejected and must immediately be removed from the site by the Vendor or disposed of as directed by the Architect at the costs and expenses of the Vendor.

F. Completion of the Project

1. All the supply and the work must be completed in all respects within the time specified in the Notice Inviting Tender from the date of commencement of the work. Time for completion as specified in the tender shall be deemed to be the essence of the contract.

2. The Vendor shall be responsible for the true and perfect setting out of the work and for the correctness of the position, levels, dimensions and alignments of all parts of the work, if any rectification or adjustment becomes necessary the Vendor shall have to do the same at his own cost according to the direction of the Architect. During the progress of works, if any, error appears or arises with respect of position, level, dimensions or alignment of any part of the work contractor shall at his own cost rectify such defects to the satisfaction of the Architect. Any setting out that may be done or checked by either of them shall not in any way relieve the contractor from their responsibility for correctness and rectification thereof.

3. For cogent reasons over which the Vendor will have no control and which will slow down the progress, contractor shall maintain hindrance record, duly signed by the Architect, on the same day of such occurrence/event, and approved by the company extension of time for the period lost may be granted on receipt of application from the Vendor before the expiry date of the contract. No claim whatsoever for idle labour, additional establishment, enhanced cost of materials and labour and hire charges of tools & plants etc. would be entertained under any circumstances. The Vendor should consider the above factor while quoting this rate.

4. The Vendor shall not be entitled to any compensation for any loss due to delays arising out of modification of the drawing, addition & alterations of

specifications.

G. Payments

1. The works will be paid for as "measured work" based on actual work done and not as a "lump sum" contract.

2. Payment shall be made via electronic fund transfer only to the bank account specified, as per the form provided under **Annexure D**, in the Tender response.

3. All bills shall be submitted by the Vendor in the form prescribed by the Company. Normally one interim bill shall be prepared each month subject to minimum value for interim certificate as stated in these documents. The bills in proper forms must be duly accompanied by detailed measurements in support of the quantities of work done and must show deductions for all previous payments, retention money etc. The bill shall be checked at the site by the Site Engineer and thereafter the Architect shall issue a certificate after due scrutiny of the Vendor's bill which may be further verified by the Company and the Vendor shall be entitled to payment thereof, within 15 working days honoring/interim certificates named in these documents, as per final verified amount by the Company.

4. 10% of the value of each running bill shall be deducted as Retention Money, till the amount so accumulated equals 10% of the work order. The Retention Money shall be refunded after the Defect Liability Period provided all defects are attended satisfactorily. Such certificate shall only include the value of said material and goods as and from such time as they are reasonably, properly required and not prematurely brought to or placed adjacent to the work.

1. All payments shall be subject to TDS and any other taxes as applicable from time to time and any other amounts as may be deductible/recoverable as per the terms and conditions of the contract.

2. No payment shall be made in advance of the award of the contract. No mobilization Advance and secured Advance will be allowed.

3. It may be noted that ECGC will not pay any amount/ expenses/ charges/ fees/

travelling expenses/ boarding expenses/ lodging expenses/ conveyance expenses/ out-of-pocket expenses other than the agreed amount as per the purchase order/contract.

4. Any decrease in taxes must be passed on to ECGC/ Company.

5. No adjustment of Price or Price escalation of any kind will be allowed.

6. The final bill will be released on satisfactory completion of the entire work and compliance with all the terms and conditions/obligations mentioned and on proper submission of the bill together with the measurements. Any sum of money due and payable to the Vendor (including any EMD returnable to him) under this contract may be appropriated by the Company and set off against any claim of the Company for the payment of a sum of money arising out of this tender or under any other contract made by the Vendor with the Company.

7. The Vendor shall, upon the request of the Company furnish them with all the invoices, accounts, receipts and other vouchers that they may require in connection with the works under this contract. If the Vendor shall use materials less than what he is required under the contract, the value of the difference in the quantity of the materials he was required to use and that he actually used shall be deducted from his dues. The decision of the Company shall be final and binding on the contractor as to the amount of materials, the Vendor is required to use for any work under this contract.

H. Indemnity

1. Vendor shall indemnify, defend and hold harmless the Company from and against any liability, losses, costs and expenses (including reasonable attorney's fees) relating to or arising out of the breach of this Agreement, the negligence or wilful misconduct of Vendor or its employees or agents. No party shall however be liable for any loss or damage arising from reliance on any information or materials supplied by the other party or any third party on behalf of the other party or for any inaccuracy or other defect in any information or materials supplied by the other party or any third party on behalf of the other party. In addition to this, the vendor shall keep the Company saved, harmless and indemnified against claims if any of the workmen or any other

person and all costs and expenses as any be incurred by the Company in connection with any claim that may be made by any workman or any other person.

2. The contractor shall pay all fees required to be given or paid under any statute or any regulation or by-law of any local or other statutory authority which may apply to the works and shall keep the ECGC/Company protected against all penalties and liabilities of every kind for breach of such statute regulation or law.

3. The Vendor shall indemnify the Company for costs and/or expenses and/or loss incurred by the Company due to false and/or misleading information or documents provided by the Vendor during the Bidding process or thereafter including the duration of this contract.

4. The Vendor shall also fully indemnify the Company in respect of any cost, charges or expenses arising out of any claim or proceedings at law and also in respect of any award of compensation of damages arising therefrom.

I. Liquidated Damages

In case, the completion of the project is delayed due to reasons attributable to the Vendors, the Company shall impose liquidated damages @ 0.5 % (Zero-point five per cent) on the awarded contract value for each week of delay subject to a maximum of 10% (ten per cent) of the awarded contract value.

J. Limitation of Liability

1. Except for breach of Confidentiality and Infringement of Intellectual property rights under this agreement, each party's total liability for any damages, losses, costs, liabilities arising out of or in connection with this Agreement whether under contract, tort or otherwise shall not exceed an amount equivalent to the total fees paid by the Company to the Vendor under this Agreement.
2. Vendor shall also be required to comply with statutory and regulatory requirements as imposed by various statutes, labour laws, local body rules, state and central Government Body statutes, and any other regulatory

requirements applicable on the Service Provider, and shall produce the same for records of ECGC Limited and / or its Auditors and / or its regulator.

3. The aggregate liability of Vendor or ECGC in connection with this Agreement/ service contract, the services provided by Vendor for the specific scope of work document, regardless of the form or nature of the action giving rise to such liability (whether in contract, tort or otherwise) and including any or all liability shall be the total bid amount.

K. Insurance and Defect Liability Period

1. The Vendor is required to take the Contractor's All Risk Insurance Policy (CAR Policy) and Workmen Compensation Policy concerning the work and the workmen within 7 days from the acceptance of the tender award letter with an IRDA approved Insurance Company in the name of the Vendor from the date of commencement of work till the end of Defect Liability Period. The value of the work to be insured would be 125% of the contract value for CAR Policy.

2. The CAR policy should have additional coverage under third-party liabilities. The liabilities should be one lakh rupees per accident. The premium receipt and the policies should be submitted to the Company. The contractor shall fully indemnify the Company against all claims which may be made against the Company by any member of the public or other third party in respect of anything which may arise in respect of the works or in consequence thereof. The contractor shall also fully indemnify the Company against all claims which may be made upon the Company, whether under the Workmen Compensation Act or any Statute in force during the currency of this contract or at common law in respect of any employee of the Vendor or any sub-contractor. The Vendor shall be responsible for anything which may be excluded from the insurance policies above referred to.

3. The defect Liability Period is 12 months from the date of satisfactory completion of the work, as certified by the Architect unless otherwise specified.

4. During Defect Liability Period the Vendor has to rectify all the defects noticed

free of charge.

5. In case the Vendor fails to attend to the rectification work within 7 days of reporting the same in writing, the Company will have the liberty to carry out the said work through any other means at the cost & risk of the Vendor. Such expenditure shall be recovered from the Retention Money or any other amount due to the Vendor in this or any other contract. The Defects Liability Period shall be extended for as long as defects remain to be corrected.

6. While rectifying, the Vendor should ensure that the surroundings are protected against any possible damage. In case of any damage, the same should be made good by the contractor at his cost.

L. Representation and Warranties

1. Vendor shall be required to comply with statutory and regulatory requirements as imposed by various statutes including the new labor (the Code on Wages (2019), the Industrial Relations Code (2020), the Code on Social Security (2020), and the Occupational Safety, Health, and Working Conditions Code (2020)) and labor laws such as (a) Contract Labour (Regulation Abolition) Act, 1970, (b) Apprentice Act, 1961, (c) Minimum Wages Act, 1948, (d) Employees' Provident Fund and Miscellaneous Provisions Act, 1952; (e) Employees State Insurance Act,1948, (f) Minimum wages according to the rates notified and/or revised by the State Government from time to time under the Minimum Wages Act, 1948; (g) Safety and welfare standards as per the provisions of the Building and other Constructions applicable in Moradabad; etc., local body rules, state and central Government Body statutes, and any other regulatory requirements applicable on the Vendor, and shall produce the same for records of ECGC Limited and/or its Auditors and/or its regulator on demand. If he fails to do so, the Company may at its discretion, take necessary measures over the Vendor and appropriate the amounts against the invoices of the Vendor. The Vendor shall also make himself liable for any pecuniary liabilities arising out on account of any violation of the provision of the said Act(s).

2. Vendor shall be required to obtain valid Registration Certificate & Labour

License from respective Regional Labour Offices where construction work by them is proposed to be carried out.

3. The Vendor shall give all notices required by said act, rules, regulations and Byelaws etc. and pay all fees payable to such authorities for the execution of the work involved. The cost, if any, shall be deemed to have been included in his quoted rates, taking into account all liabilities for licenses, fees for footpath encroachment and restorations etc. He shall indemnify the Company against such liabilities and shall defend all actions arising from such claims or liabilities.

4. The Vendor shall employ an "A" grade Licence holder Electrical contractor to complete the electrical work in the scope of the tender.

5. The Vendor shall comply with the Company's internal guidelines, instructions, manuals, scrutiny lists, procedures, further specifics and requirements ("Guidelines") in relation to the Services, as may be provided in writing by the Company to the Service Provider. However, in the event there is a conflict between the guidelines and the terms set out in the Tender, the terms set out in the Tender shall prevail.

M. Termination

1. The Company may terminate all or any part of the Contract at any time during the term without assigning any reason, by giving 15 days prior written notice to the Vendor. In the event of termination, the Company's liability shall be to the extent of the work already rendered by the Vendor and availed by the Company under this Contract. In case the contract is terminated by the Company on account of any breaches committed by the Vendor in breach of its obligations under the Contract, the company may invoke the PBG given by the Vendor.

2. The Vendor hereby certifies and affirms that all documents, information, and representations provided during the bidding process, including any submitted with the bid and thereafter, are true, correct, and complete to the best of their knowledge and belief. The Vendor further acknowledges and accepts that if, at any stage during the bidding process, or after the award of the contract, it is

found that any document or information provided was false, fabricated, or misleading, whether knowingly or unknowingly, or if any of the information ceased to be true during the course of the bidding process, or thereafter including the validity of this contract, ECGC reserves the right to:

2.1. terminate the contract;

2.2. Claim compensation and seek damages for any losses, costs, or expenses incurred by ECGC as a result of such false or misleading documents or information, whether intentional or not;

2.3. Take any other legal action as deemed appropriate by ECGC.

3. If the Vendor fails to complete the renovation work within the agreed timeline or any extended period mutually agreed upon in writing, the Company may terminate the contract.

4. The Vendor acknowledges that such actions may be taken without further notice or recourse to the Vendor, and the Vendor shall be liable for any consequences arising from the provision of false, incomplete, or misleading information at any stage of the bidding process or contract execution.

5. In addition to the aforementioned grounds for termination, either party may terminate this contract if the other party breaches any material term or condition of the contract, including but not limited to:

- Failure to pay for services rendered or failure to deliver agreed-upon materials or services;

- Failure to maintain required insurance

- Failure to adhere to statutory requirements, health and safety regulations during the course of the renovation work.

6. Any notice correspondence etc. issued to the authorized representative or left at his address, will be deemed to have been issued to the Vendor.

N. Entire Agreement

It is expressly agreed between the parties that the bid received from the Vendor along with its annexures, Tender Award Letter, Notice for Tender Document, any addendum or corrigendum issued thereafter and the completed Annexures thereto constitutes the Entire Agreement between the Parties.

O. Confidentiality

The Vendor and/or its personnel shall keep confidential at all times any/all information that is shared by the Company or Architect or has come to their knowledge during the performance of Services under the Contract.

P. Intellectual Property Law

1. All the manuals, guidelines, documents, drawings etc. provided by the Architect/company shall be treated as existing intellectual property rights of the Architect/Company therein shall continue to vest with the Architect/Company. Any royalties patents or charges for the use of such intellectual property that may be involved in the contract shall be included in the price.

2. As per prevailing government notification, the Contractor will have to submit the receipt of payment of royalty to the Government for use of sand, stone materials, laterite, murram, gravel, earth etc. to the Architect before preparation of bill for payment, when they collect the materials directly from the source. If they collect the materials from the authorized quarry holder or commercial establishment who directly or indirectly pays the royalty to the Government, a necessary certificate or cash memo for sale in that respect from them shall have to be produced to the Architect failing which necessary deduction from the dues of the contractor may be made as fixed by the Architect in consultation with the Company.

3. The Contractor shall save, protect and indemnify ECGC from and against all claims, demands, suits and proceedings for and/or an account of infringement of any patent rights, design, trade mark of the name of other protected right in respect of any constructional plant, machine, work, materials, thing or process used for or in connection with works or temporary works or any of them.

Q. Relationship between Company and Vendor

The relationship between Company and Vendor is solely that of an independent contractor and the relationship is on a principal-to-principal basis. Nothing in this Agreement shall constitute the Parties as partners, joint ventures, or co-owners, or constitute either Party as the agent, employee or representative of the other, or empower either Party to act for, bind or otherwise create or assume any obligation on behalf of the other, and neither Party shall hold itself out as having authority to do the same.

R. Waiver

Any modification to the terms and conditions can be made only in writing and signed by the parties hereto. Any failure or delay by the Company to enforce any provision or right available to it under this Agreement shall not be deemed to be a waiver of such provision or right and shall not preclude the Company from exercising the same subsequently.

S. Survival

The termination of the Contract shall not affect the rights of and or obligations of the Parties which arose prior to the termination.

T. Force Majeure

1. Notwithstanding the provisions of the Contract, the Vendor shall not be liable for, liquidated damages, or termination for default, if and to the extent, that, the delay in performance, or other failures to perform its obligations under the Contract, is the result of an event of Force Majeure.

2. For purposes of this clause, “Force Majeure” means an event beyond the control of the Vendor not involving the Vendor’s fault or negligence and is not foreseeable. Such events may include but are not restricted to, acts of the Company in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

3. If a Force Majeure situation arises, the Vendor shall promptly notify the Company in writing of such condition and the cause thereof. Unless otherwise directed by the Company in writing, the Vendor shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force

Majeure event.

U. Governing Law and Jurisdiction

The Courts in Moradabad shall alone have jurisdiction for the purposes of adjudication of any dispute of differences whatsoever in respect of or relating to or arising out of or in any way touching the works awarded or the terms and conditions of the Contract.

V. Labour Records:

The Vendor shall maintain relevant records and fulfil all conditions and requirements in accordance with the following Act and Rules made hereunder.

a.) Code on Wages, 2019
b.) Industrial Relations Code, 2020
c.) Code on Social security, 2020
d.) Occupational Safety, Health and Working Conditions Code, 2020
e.) The Payment of Wages Act.
f.) Employer's Liability Act.
g.) Workmen's Compensation Act.
h.) Contract Labour (Regulation & Abolition) Act, 1970 and Central Rules, 1971.
i.) Apprentices Act 1961.
j.) Minimum wages Act 1948.
k.) Industrial Disputes Act 1947.
l.) Maternity benefit Act 1961.
m.) ESI Act.
n.) Payment of Bonus Act.
o.) Payment of Gratuity Act.

Any other Act are enactment relating thereto and rules framed there under from time to time.

IN WITNESS WHEREOF, the Parties hereto have set and subscribed their respective hands unto this Agreement on the day and date first set out hereinabove.

For and on behalf of	**For and on behalf of**
ECGC Ltd.	**Vendor**
the "Company" aforesaid,	**the "Vendor" aforesaid,**
through its authorized signatory	**through its authorized signatory**
_____	_____
NAME:……	**NAME: …….**
DESIGNATION: ……..	**DESIGNATION: ……..**

WITNESSES:

1. 2.

ANNEXURE K: CODE OF INTEGRITY

DECLARATION

I/We working as …… in …… (name of the firm/ Company and firm's/ Company's address in full be mentioned), hereby solemnly affirm and declare that I have been authorized by the firm/ Company to sign the bids.

I, hereby declare and certify, on behalf of the firm/Company, that we have accepted all the terms & conditions mentioned in the ……and we shall abide by all the terms & conditions of NIT/Agreement.

I/ We hereby agree and undertake that we have not directly or through any other person or firm offered, promised or given nor shall we offer, promise or give, to any employee of ECGC involved in the processing and/or approval of our proposal/ offer/ bid/ tender/ contract or to any third person any material or any other benefit which he/she is not legally entitled to, in order to obtain in exchange advantage of any kind whatsoever, before or during or after the processing and/or approval of our proposal/ offer/ bid/ tender/ contract.

I/we further declare that in relation to my/our Bid submitted to ECGC, in response to NIT No. ……,I/we…….hereby undertake that I/we shall abide by the Code of Integrity and make disclosure as to any Conflict of Interest at all times, and understand that any breach of the Code of Integrity will render me/us liable to be removed from the list of registered bidders, and would also subject me/us to other punitive and penal action such as cancellation of contracts, banning, debarring and blacklisting or action in the court of Law, and so on.

Signature of Authorized Signatory of the firm with Seal & Stamp

Date : Place:

Name:

Designation: