



BID-III

(TENDER DOCUMENT)

Name of work : E-Tender For Civil & Interior Works Including Modular Furniture, Chairs, Electrical Installation, Data & Telephone Cabling, Fire Alarm Systems and Air Conditioning For Proposed Modernization Of Branch Office 92 K at First Floor and Second floor of BO Building at Khopoli, Under Thane DO, Maharashtra

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CONDITIONS OF CONTRACT**1. INTERPRETATIONS:**

In construing these Conditions, the Specifications, the Schedule of Quantities, Tender and Agreement, the following words shall have the meanings herein assigned to them except where the subject or context otherwise requires:

“Employer” shall mean THE LIFE INSURANCE CORPORATION OF INDIA and his (their) heirs, legal representatives, assignees and successors.

“Chief Engineer” shall mean the person occupying the post of head of the Zonal Engineering Department of the Corporation.

“Corporation’s Engineers” shall mean such Deputy Chief Engineers, Superintending Engineers and/or Executive Engineers of the Corporation, who shall from time to time be appointed by the Chief Engineer for supervising the work carried out by the Contractor or for any purpose in connection therewith:

The term “Site Engineer” shall mean the person appointed and paid by the Employer, acting under the order of the Corporation’s Engineer to superintend the work.

The Contractor/Construction Associates shall mean, the individual, firm or company whether incorporated or not, who is awarded the contract & shall include the legal representative of such individual or the persons composing such firm or company or the successors of such individual, firm or company & the permitted assignees of such individual, firm or company.

The “Site” shall mean the lands/buildings and/or other places on, in, into or through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract

“This Contract” shall mean the Articles of Agreement, these Conditions, the General Instructions to Contractor, General Preambles to Schedule of Quantities, Special Conditions, the Schedule of Quantities, the Specifications, the Appendices, the Drawings and other related correspondence.

“Act of Insolvency” shall mean any act of insolvency as defined by the Presidency Towns Insolvency Act, or the Provincial Insolvency Act or any amending Statute.

“Notice in Writing” or written notice shall mean a notice in written, typed or printed characters, sent (unless delivered personally or otherwise proved to have been received) by registered



post to the last known private or business address or registered office of the addressee and shall be deemed to have been received when in the ordinary course of post it would have been delivered.

Words importing persons include Firms and Corporations, words importing the singular only also include the plural and vice versa where the context so requires.

The titles of the Clauses shall not affect or alter the meaning of Clauses and are solely for the purpose of facilitating reference.

The following abbreviations shall be followed for the designations of various LIC Officers:

DESIGNATIONS

ABBREVIATIONS

Executive Director (Engineering)	E.D.(E)
Zonal Manager	Z.M.
Chief Engineer	C.E.
Chief Architect	C.A.
Deputy Chief Architect	D.C.A.
Deputy Chief Engineer	Dy.C.E.
Superintending Engineer	S.E.
Senior Architect	S.A.
Executive Engineer	E.E.
Deputy Senior Architect	D.S.A.
Asst. Secretary	A.S.

Wherever the words “approved”, “directed”, “as required”, “selected” or words of like effect are used, it is to be understood that the approval/direction, requirement or selection of the Corporation’s Engineer are intended unless otherwise specified.

The words “as described” shall mean the description in the Special Conditions, Specifications, General Instructions, Drawings etc. of this tender.

The words “allow” shall mean that the Contractor shall include in his rates for the particular matter referred to.

“Day Work” shall mean items of labour and/or materials which in the opinion of the Corporation’s Engineer are not capable of being evaluated by the accepted method of measurement and analysis.

2. SCOPE OF CONTRACT:

The Contractor shall carry out and complete the works in every respect in accordance with this Contract and in accordance with the directions and to the satisfaction of the Corporation's Engineer. The Corporation's Engineer may issue further drawings and/or written instructions, details, directions and explanation in regard to:

- a. The variation or modification of the Design, quality of works or the addition or omission or substitution of any work;
- b. Any discrepancy in the Drawings or between the Schedule of Quantities and/or Drawings and/or Specifications;
- c. The removal from the site of any materials brought thereon by the Contractor and the substitution of any other material thereof;
- d. The removal and/or re-execution of any work executed by the Contractor;
- e. The dismissal from the work of any persons employed thereupon;
- f. The opening up for inspection of any work covered thereupon;
- g. The amending and making good of any defects under relevant Clause giving details of defects after completion.

The Contractor shall forthwith comply with and duly execute all works comprised in such Instructions subject to the provisions of relevant specific conditions of the Contract. In the event of any dispute or difference of opinion the contractor shall refer the matter within 7 (seven) days of the issue of such instruction to the Chief Engineer whose decision shall be final & binding.

3. DISCREPANCIES:

If there are varying or conflicting provisions made in any one document forming part of Contract, the Chief Engineer shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor.

The several documents forming the Contract are to be taken as mutually explanatory of one another, and the order of precedence shall be as follows;

- a) Special conditions
- b) General preambles to schedule of quantities
- c) General instructions
- d) Conditions of contract

In case of discrepancies between the Schedule of Quantities, the specifications and/or drawings the following order of precedence shall be observed

- a) Description in Schedule of Quantities
- b) Specifications of relevant Trade
- c) Drawings; detailed drawings shall be followed in preference to small scale drawings and figured dimension in preference to scale.
- d) Indian Standard Specifications of 'BIS'

4. DRAWINGS AND SCHEDULE OF QUANTITIES:

Two complete sets of the Drawings and Specifications and Schedule of Quantities shall be furnished by the employer to the contractor. Two copies of the additional Drawings, if any, shall be furnished within such time as the Chief Engineer may consider reasonable which may be necessary for execution of any part of the work. Such copies shall be kept on the work site and the CE and his representatives shall at all reasonable times have access to the same and they shall be returned to the EE by the Contractor on completion of the contract.

This Contract and the signed Drawings, Specifications and Schedule of Quantities shall remain in the custody of the Employer.

5. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY FOR EXECUTION OF WORK:

Contractor shall provide everything necessary for the proper execution of the work according to the intent & meaning of the Drawings, Schedule of Quantities and Specifications taken together, whether the same may or may not be explicitly shown or described therein provided that the same can reasonably be inferred there from and if the Contractor finds any discrepancy therein he shall immediately and in writing refer the same to the CE whose decision shall be final and binding on the Contractor.

The Contractor shall supply, fix and maintain at his cost during the execution of any work all the necessary Centering, Scaffolding, Staging, Planking, Timbering, Strutting, Shoring, Pumping, Fencing, Boarding, Watching and Lighting by night as well as by day, required not only for the proper execution and protection of the said work but also for the protection of the Public and the safety of any adjacent Roads, Streets, Cellars, Vaults, Ovens, Pavements, Walls, Houses, Buildings and all other erections, matters or things and the Contractors shall take down and remove any or all such Centering, Scaffolding, Staging, Planking, Timbering, Strutting, Shoring, etc., as occasion shall require or when ordered to do so, and shall fully reinstate and make good all matters and things disturbed during the execution of the work to the satisfaction of the Corporation's Engineer.

6. AUTHORITIES, NOTICES AND PATENTS:

The Contractors shall conform to the provisions of any Acts of the Legislature relating to the work and to the Regulations and Bye-Laws of any Authority and or any Water, Lighting and other Companies and/or Authorities with whose system the structure is proposed to be

connected and shall before making any variations from the Drawings or Specifications that may be necessitated by so conforming give to the CE written notice specifying the variations proposed to be made and the reasons for making them and apply for instructions thereon. In case the Contractor shall not within 7 (seven) days receive such instructions, he shall proceed with the work conforming with the Provisions, Regulations or Bye-Laws in question.

In particular, the Contractors shall be responsible to Register themselves under the Contract Labour (Regulation & Abolition) Act 1970 and Rules there under and any amendment thereto; They must comply with and carry out all the provisions and obligations under the said Act and Rules and furnish all information to Employer as may be required by it and shall indemnify the Employer against any penalties/claims arising from any default on their part.

The Contractor shall arrange to give all notices required by the said Acts, Regulations or Bye-Laws to be given to any Authority and to pay to such Authority or to any Public Office all fees/costs that may be properly chargeable in respect of the work and lodge the receipts with the Employer.

The Contractors shall indemnify the Employer against all claims in respect of patent, rights, and shall defend all actions arising from such claims unless he has informed the Chief Engineer before any such infringement and received his permission to proceed and shall himself pay all royalties, licence fees, damages, costs and charges of all and every sort that may be legally incurred in respect thereof.

The Contractor should observe that his work shall not cause any nuisance to the Public in general and to the neighbouring occupants in particular.

Should the Contractor desire to work on Sundays, Holidays and during night hours, permission in writing from the Corporation's Engineer must be obtained in time. It shall be the responsibility of the Contractor to obtain permission from Civil Authorities, if necessary.

7. SETTING OUT WORK:

The Contractor shall set out the work and shall be responsible for the true and perfect setting out of the same and for the corrections of the positions, levels, dimensions and alignment of all parts thereof. If at any time any error shall appear during the progress of any part of the work, the Contractor shall at his own cost rectify such error, if called upon, to the satisfaction of the Corporation's Engineer. The Contractor must not commence work until the outlines of the building and Centre line layout have been pegged out and approved by the Corporation's Engineer.

8. CONTRACTOR IMMEDIATELY TO REMOVE OFFENSIVE MATTER:

All soil, filth or other matter of an offensive nature taken out of any trench, sewer, drain, cesspool or other place shall not be deposited on the surface, but shall be at once carted away by the Contractor to some pit or place provided by him outside the work site.

9. MATERIALS AND SAMPLES TO BE BEST:

All the materials stores and equipment required for the full performance of the Contract must be provided through normal trade channels and must include applicable import duties and all applicable taxes and other charges, if any. They shall be of approved quality and the best of their kind available and the Contractor must be entirely responsible for the proper and efficient carrying out of the work. The Contractor shall order all materials required for the execution of the work from local as well as from outside sources if situation warrants so as early as necessary to the satisfaction of the Corporation's Engineer and to ensure that such materials are on site well ahead of requirement for use in the work. Non – availability of materials in local market will not be an issue behind slow progress of work.

Before ordering such materials, the Contractor shall get samples of the materials approved well in time. Preference shall be given to ISI marked products and approved brands of requisite quality as mentioned in the tender. For materials to be used if permitted which are neither approved brands nor ISI marked, the same shall be got tested from approved laboratories at the Contractor's cost before approval. Approved brand and ISI marked product will also be tested if desired by the CE and if the test results are satisfactory, the cost of testing shall be borne by the Employer otherwise by the Contractor. No claim will be allowed for delay to the progress of work caused by testing. If called upon by the Executive Engineer, the Contractor shall produce proof for having arranged for the supply of materials well in time.

The Contractor shall furnish well in time before work commences at his own cost, any samples of workmanship that may be called for by the Corporation's Engineer for his approval and any further samples in case of rejection until such samples are approved. Such samples when approved shall be the minimum standard for the work to which they apply. In case of items like suspended ceiling, partitions, etc. typical sample panels or proto-types shall be erected in position for approval before undertaking work. Rates quoted shall cover for all such preliminary works.

10. ACCESS:

Any of the Corporation's Engineers or any persons authorised by the Employer/Chief Engineer shall at all reasonable time have free access to the work and/or the workshops, factories or other places where materials are being prepared or constructed for the Contract and also to any place where the materials are lying or from which they are being obtained and the Contractor shall give every facility to all of them necessary for inspection and examination and test of the materials and workmanship. Except the representatives of the Public Authorities, no person shall be allowed on the work at any time without the written permission of the Corporation's Engineer.

If any work is to be done at a place other than the site of the work, the Contractor shall obtain the written permission of the Corporation's Engineer for doing so.

11. CONTRACTOR'S SUPERVISION & MINIMUM REQUIREMENT OF TECHNICAL STAFF/FOREMEN:

The Contractor shall either himself supervise the execution of the contract or may appoint a Competent representative approved by the CE to act in his stead.

Where the contractor is not a qualified Engineer or even if he is so qualified, he cannot in the opinion of C.E., give his full personal attention to the works, he shall at his own expense employ person(s) possessing the qualification and experience as described hereunder as his accredited representative to supervise the works and to receive instructions from Corporation's Engineers. Any directions, instructions or notices given by the Corporation's Engineer to such supervisor(s) shall be deemed to be given to the contractors.

- a) FOR CIVIL WORKS COSTING UPTO Rs. 100 LAKHS : A qualified resident Engineer having a Government recognized Diploma in Civil Engineering and minimum of 2 years experience on building construction site.
- b) FOR CIVIL WORKS COSTING MORE THAN Rs.100 LAKHS & UPTO Rs.200 LAKHS : A qualified resident Engineer having a Recognized Degree in Civil Engineering or equivalent qualification and minimum of 2 years experience on building construction site/s or a recognized Diploma in Civil Engineering with minimum 5 years experience on such construction jobs.
- c) FOR CIVIL WORKS COSTING MORE THAN Rs.200 LAKHS :

- i) A qualified resident Engineer having a Recognised Degree in Civil Engineering and minimum of 3 years experience of such major construction site/s or a recognised diploma in Civil Engineering with 8 years experience.
- ii) In addition to above the contractor shall employ suitable number of supervisors, store supervisors, with recognised degree / diploma in the relevant branches or recognised qualification & experience in the relevant trades for proper execution of the work as approved by the Chief Engineer.
- d) The CE may vary any of the above qualifications / experience at his discretion if so warranted by conditions prevailing and applicable to any particular work such as Air-conditioning, HT, Interiors etc.
- e) If the contractor fails to employ suitable person(s) to supervise the work or fails to appoint replacement(s) when necessitated, amount as stipulated in the Appendix to the conditions of contract shall be recovered from the contractor for each Engineer and each supervisor for the period of non-employment.

12. DISMISSAL OF WORKMEN:

The Contractor shall, on the instruction of the Corporation's Engineer, immediately dismiss from the work any person employed by him thereon, who may, in the opinion of the Corporation's Engineer, be unsuitable or incompetent or who may misconduct himself and such person shall not be again employed or allowed on the work without the permission of the Corporation's Engineer.

13. DATE OF WORK COMMENCEMENT AND COMPLETION:

The "Date of work Commencement" shall be as stated in the Appendix to the conditions of contract – Par II of this tender document and as per work order and the Contractor shall thereupon and forthwith begin the work and shall regularly proceed with and complete the same on or before the "Date of work Completion" stated in the Work Order, subject to the provisions for extension of time hereinafter contained.

14. ASSIGNMENT:

The whole of the work included in the Contract shall be executed by the Contractor and the Contractor shall not directly or indirectly transfer, assign or sublet the Contract or any part, share of interest therein nor shall he take a new partner without the written consent of the Employer/CE and no subletting shall relieve the Contractor from the full and entire

responsibility of the Contract or from the active superintendence of the work during its progress.

15. DEVIATION. VARIATION. EXTRA/DEVIATED ITEMS AND PRICING:

The Contractor should note that unless otherwise stated, the tender is strictly on **Item** Rate basis and his attention is drawn to the fact that rates for each and every item should be correct, workable and self supporting. The quantities in the Schedule of Quantities approximately indicate the total extent of work and no variation i.e. additions, omissions or subtractions shall vitiate the Contract. No liability shall attach to the Employer for any error therein or variation there from.

The contractor may when authorized and shall when directed, in writing by the CE or the Corporation's Engineers, whom the CE may for that purpose appoint, add to, omit from, make alterations in, substitutions for, or vary the works shown upon the Drawings or described in Specifications or included in the Schedule of Quantities but the Contractor shall make no additions, omissions, alterations, substitutions or variations without such authorization or direction. A verbal authority or direction by the CE, if confirmed by the contractor in writing within 7 (seven) days, be deemed to have been given in writing.

The rates of such altered, additional or substituted works shall be determined in accordance with the following.

- a. The net rates or prices in the original tender shall determine the valuation of the extra work where such extra work is of similar character and executed under similar conditions as the work priced therein.
- b. The net price of the items in the original tender shall determine the value of the items omitted. However, if omissions vary the conditions under which any remaining items of the work are carried out or if the amount of any omission relative to the amount of the whole of the Contract works or to any part thereof shall be such that in the opinion of the Chief Engineer, the net rate or price contained in the Schedule of Quantities or Tender or for any item of work involves loss or expenses beyond that reasonably contemplated by the Contractor and is by reason of such omission rendered unreasonable or inapplicable, the Chief Engineer shall fix another rate or price as in the circumstance he shall think reasonable and proper.

- c. If the rate for any altered, additional, or substituted item of work is not specified in the schedule of quantities, the rate for that item shall be derived from the rate for the nearest similar item specified therein.
- d. If the rate for altered, additional or substituted item of work cannot be determined in the manner specified above, then such items of work shall be priced on the basis of coefficients of labour and materials as given in the latest CPWD rate analysis handbook and rates for labour and materials wherever applicable shall be the market rate prevailing at the time of execution.
- e. Where such co-efficient are not available in C.P.W.D. rate analysis, the actual Labour/Materials involved and recorded by the Executive Engineer in executing the items shall be considered.
- f. Where extra work cannot be properly measured or valued, the Contractor shall be allowed "Day Work" prices at the net rates stated in the Tender or the Schedule of Quantities or, if not so stated, then in accordance with the local "Day Work" rates and wages for the district, provided that in either case vouchers specifying the date and time (and if required by the EE the names of workmen employed) and materials incorporated be delivered for verification to the EE or his representative at or before the end of the week following that in which the work has been executed. The EE is not bound to recognize the cost of materials furnished in vouchers; the CE at his discretion, will fix the price of such materials based upon market value.
- g. While fixing rates of extra items 15% (Fifteen percent only) shall be allowed over and above the basic rate of material (without GST) T & P, water charges and labour to cover all supervision, overheads, profits and all other applicable Taxes. cess. GST on works contract will be paid separately.
- h. Quantities in Schedule of quantities are provisional. Quantities may increase or decrease to any extent. Even some of the items may not be executed. No extra claim in this regard will be entertained..
- i. For all extra items of work, the contractor should submit to the concerned Corporation's Engineer the necessary particulars along with his analysis and the rate he proposes to claim for consideration within a period of 4 (four) weeks from the time of cropping up of any authorized extra / deviated item. He shall also ensure that all the authorized claims are included in the final bill. If the contractor fails to submit his claim within the stipulated period or the period duly extended by the Corporation's Engineer, then the CE shall proceed to fix the rate for the item(s) and the same shall be final and binding on the contractor.

- j. The Contractor shall note that Extra/Deviated items claim and/or any other claim whatsoever if submitted after submission of his Final Bill, will not be entertained and considered by the Employer. The Contractor shall not be allowed to make any Additions/ Alterations/ Revisions / Changes/ Modifications/ Variations in the final bill, after the final bill is submitted by him.

16. SUB-CONTRACTORS:

All specialist Merchants, Tradesmen and others, executing any work or supplying, fixing any goods for which provisional sums are included in the Schedule of Quantities and/or Specifications, who may be nominated or selected by the CE, who shall be the final authority are hereby declared to be Sub-Contractors and are herein referred to as nominated Sub- Contractors.

No nominated Sub-contractor shall be employed on or in connection with the work against whom the Contractors shall make reasonable objection or (save where the CE and the Contractor shall otherwise agree) who will not enter into a Contract providing:-

- a. That the nominated Sub-Contractor shall indemnify the Contractor against the same obligation in respect of the Sub-Contractor as the Contractor is under, in respect of this Contract;
- b. That the nominated Sub-Contractor shall indemnify the Contractor against claims in respect of any negligence by the Sub-Contractor or his servants or agents or any misuse by him or them of any scaffolding or other plant or the property of the Contractor or under any Workmen's Compensation Act in force.

17. THIRD PARTY LIABILITY, DAMAGE TO NEIGHBOURING PROPERTY, LOSS OF MATERIAL AND WORKMEN'S COMPENSATION:

1. The Contractor shall be responsible for all injury to persons, animals or things, and for all damage to structural and/or decorative part of property which may arise from the operations or neglect of himself or of any Sub-contractor or any of his Sub-Contractor's employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in anyway connected with the carrying out of his Contract. This Clause shall be held to include inter- alia, any damage to Building, whether immediately adjacent or otherwise and any damage to roads, streets, footpaths, bridges, or ways as well as all damage caused to the building, and the works forming the subject of this Contract by frost, rain, wind or other inclemency of the weather. The Contractor shall fully indemnify the Employer and hold him harmless in respect of all and any expenses arising from any such injury or damage to persons or property as

aforesaid and also in respect of all and any claim made in respect of injury or damage under any acts of Government or otherwise and also in respect of any award or compensation or damages consequent upon such claim.

2. The Contractor shall fully indemnify the employer against any loss, damage or deterioration for whatever reason, of all materials brought at site and especially material supplied by or paid for partly or wholly by the employer.
3. The Contractor shall reinstate all damage and loss of every sort mentioned in this Clause so as to deliver up the whole of the Contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to the property of the third parties.
4. The Contractor shall fully indemnify the Employer against all claims which may be made against the Employer 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.
5. The contractor shall at his own expense arrange to effect from the date of commencement & maintain till the date of virtual completion of contract, with any licensed general insurance company, a **POLICY OF INSURANCE (Contractor's all risk policy)** to cover all such risks detailed above viz. loss, damage & third party liability etc. The policy shall be an amount as mentioned in Appendix to Condition of Contract and **in the joint names of the employer & contractor** and shall be deposited with the employer and renewed as required from time to time during the currency of the contract.
6. The Contractor shall also fully indemnify the Employer against all claims which may be made upon the Employer, whether under the **WORKMEN'S COMPENSATION ACT** or any other **STATUTE** in force during the currency of this Contract or at Common law in respect of any Employee of the Contractor or any Sub-Contractor and shall at his own expense effect and maintain until the Virtual completion of the work, with "licensed General Insurance Company" a **POLICY OF INSURANCE** as mentioned in in Appendix to Condition of Contract in the joint names of the Employer and the Contractor against such risks and deposit such policy or policies with the employer & renew the same as required from time to time during the currency of the Contract.
7. The Contractor shall be responsible for anything, which may be excluded from the Insurance Policies above referred to, and also for all other damage to any property arising out of or incidental to the negligence or defective carrying out of the Contract.

8. The amount of insurance to be taken for the above policies will be jointly decided between the contractor and the employer before issue of acceptance letter based on the tendered cost, nature of work, location of site, local hazards etc.
9. In default of the Contractor insuring as provided above, or having insured failing to renew the same as required the Employer on his behalf may so insure/renew and may deduct the premiums paid from any monies due or which may become due to the Contractor together with penalty as the CE deems appropriate.
10. The Contractor shall also fully indemnify the Employer in respect of any costs, charges or expenses arising out of any claim or proceedings at law and also in respect of any award of compensation of damages arising there from.
11. The Employer shall be at liberty and is hereby empowered to deduct fully the amount of any damages, compensation costs, charges and expenses arising or accruing any such claim of damage from any sum or sums due or to become due to the Contractor.

18. DELAY AND EXTENSION OF TIME:

If the works be delayed due to any of the following:

- a) by force majeure ,
- b) by reason of any exceptionally inclement weather,
- c) by reason of proceedings taken or threatened by, or disputes with, adjoining or neighbouring owners, or public authorities,
- d) by the work, or delays, of other Contractors or Tradesmen engaged by the Employer,
- e) by reason of any additional work or instruction ordered by the employer,
- f) by reason of Civil Commotion, local commotion of workmen or strike or lock-out affecting any of the building trades,
- g) In consequence of the Contractor not having received in due time necessary instructions from the CE for which he shall have specifically applied in writing,
- h) From other causes which the CE may certify as beyond the Control of the Contractor,
- i) by reason of non-payment of interim certificate at specified time, then upon the happening of any such event causing delay the contractor shall immediately, give notice thereof in writing to the Corporation's Engineer, but shall nevertheless use constantly his best endeavours to make good this delay.

Request for extension of time shall be made by the contractor at the earliest of the event causing the delay.

In case of strike or lockout the Contractor shall give written notice thereof to the CE as soon as possible but he shall nevertheless constantly use his endeavours to prevent delay and shall do all that may reasonably be required to the satisfaction of the CE to proceed with the work.

The CE shall make a fair and reasonable assessment of the delay and grant extension of time accordingly. Such extension shall be communicated to the contractor by the Corporation's Engineer **within 30 (Thirty) days of the date of receipt of such request for extension.** Non-application by the contractor for extension shall however not be a bar for giving fair and reasonable extension which shall be as decided by the CE.

The decision of the CE as communicated by the Corporation's Engineer to the contractor on the extension of time shall be final & binding.

No claim in respect of compensation or otherwise, howsoever arising, as a result of extension granted under the above conditions shall be admissible.

COMPENSATION IN THE FORM OF PENALTY FOR DELAY OF WORK:

"The Contractor shall submit a Time and Progress Chart (CPM/PERT/Qualified Bar Chart) within 10 (Ten) days of Letter of intent and get it approved by the Chief Engineer, LIC of the Zone. The Milestone Chart shall be prepared as produced below in direct relation to the time stated in the contract documents for completion of items of the works. It shall indicate the forecast (mile-stones) of the dates of commencement and completion of various items, trades, sections of the work and may be amended as necessary by agreement between the Chief Engineer, LIC and the Contractor within the limitations of time stipulated in the Contract documents and further to ensure good progress during the execution of the work.

The physical progress report including photographs shall be submitted by the contractor on the prescribed format & the intervals (not exceeding one month) as decided by the Chief Engineer. The compensation for delay as per clause shall be leviable at intermediate stages also. In case the required progress is not achieved to meet the above time deadlines of the completion period and / or milestones of time and progress chart, provide always that the total amount of Compensation in the form of Penalty for delay to be paid under this condition shall not exceed 10% of the tendered value of work.

Compensation in the form of Penalty for delay of work @ 0.5% of the contract sum per week of delay to be computed on per day basis.

The amount of compensation in the form of Penalty shall be adjusted or set-off against any sum payable to the Contractor under this or any other contract with LIC. In case, the

contractor does not achieve a particular milestone mentioned elsewhere in the tender document, or the re-scheduled milestone(s), the amount shown against that milestone shall be withheld and to be adjusted against the compensation levied at the final grant of Extension of Time if needed. With-holding of this amount on failure to achieve a milestone, shall be automatic without any notice to the Contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.”

REWARD FOR EARLY COMPLETION :

If the Contractor completes the work in advance before the stipulated period stated in the “Appendix to Condition of Contract” in all respects and the Chief Engineer certifies in writing that in his opinion the same has been completed, the reward for early completion is applicable and payable to the contractor. If contractor completes the works 3 months in advance in all respects, 0.5% of final contract completion value shall be rewarded. If contractor completes the works less than 3 months in advance, 0.1% of the final contract completion value shall be rewarded. The amount, if payable, shall be paid along with final bill.

20. FAILURE BY CONTRACTOR TO COMPLY WITH CE'S INSTRUCTIONS :

If the Contractor after receipt of written notice from the CE, requiring compliance with such further Drawings and/or his instructions, fails within 7 (seven) days to comply with the same the CE may employ and pay other persons to execute any such work whatsoever as may be necessary to give effect thereto and all additional costs incurred in connection therewith shall be deducted from any money due or to become due to the Contractor.

21. MEASUREMENT OF WORKS:

All items having a financial value shall be entered in the Measurement Book . All measurements and levels shall be taken jointly by the Contractor or his authorised representative and Site Engineer or his authorised representative from time to time during the progress of the work and such measurements shall be signed and dated by both the parties in token of their acceptance. If any of the measurements recorded are objected by any one of the party, a note shall be made to that effect with reason, signed by both parties and referred to Corporation's Engineer whose decision in the matter shall be final and binding. Measurements can also be recorded through electronic medium where specifically approved by Chief Engineer. If the contractor or his authorised representative does not record the measurements periodically for the completed works, then the site Engineer shall take measurements after giving notice in writing of at least 3 (three) days. Measurements recorded in the absence of Contractor shall be intimated with a copy of such measurements to the contractor. If the contractor fails to countersign or record objections within a week from the date of measurement, then such measurement recorded in absence by the Site Engineer shall be deemed to be accepted by and binding on the Contractor.

The Contractor shall, without any extra charge provide all assistance with every appliance, labour and other things necessary for taking measurements (either by him or by site Engineer) and recording levels including test checking of such measurements by any person authorised by the Employer.

All work shall be measured net as fixed in its place. All measurements of 'cutting' shall be held to include for the consequent wastage on the materials used.

Except where any general or detail description of the works expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items for which procedure is not covered in the specification, measurement shall be taken in accordance with the relevant Standard Method of measurement issued by BIS and if for any item no such standard is available then a mutually agreed method shall be followed.

Measurements of all hidden/concealed items of work including extra items if any, such as, work in foundations including excavations, plinth filling, masonry, concrete etc. steel in all R.C.C. work, pipe to be encased etc. shall be jointly recorded by the contractor and Site Engineer or his authorised representative before they are covered up. Immediately after the work is ready for measurements, Contractor will give specific notice to the Site Engineer for recording the measurements. If the Site Engineer or his authorised representative fails to record the measurements, the Contractor will refer the matter to the Corporation's Engineer for instructions, but in no case shall cover up work without the latter's permission.

22. PAYMENTS:

The Contractor shall be paid by the Employer, from time to time, by instalment under Interim Certificate to be issued by the Corporation's Engineer to the Contractor on account of the work executed, as mentioned in the Appendix to the Conditions of Contract however subject to recoveries under this Contract. The Interim Certificate shall be based upon Interim Bills or Running Account Bills to be prepared by the Contractor and supported by the detailed measurements. Adequate references, sketches and cross references wherever necessary are also to be provided with detailed measurements. The Corporation's Engineer may allow inclusion in the Interim Certificate such amount as he may consider proper on account of materials delivered upon the site by the Contractor for use in the work but not incorporated in it Provided always that the issue by the Corporation's Engineer of any Certificate during the progress of the works or after their completion shall not relieve the Contractor from his liability in cases of fraud, dishonesty or fraudulent concealment relating to the work or materials or any matter dealt with in the Certificate in case of all defects and insufficiencies in the work or materials which a reasonable examination would not have disclosed. No Certificate of the Corporation's Engineer shall of itself be conclusive evidence that any work or materials to which it related are in accordance with the Contract;

Payment upon the Corporation's Engineer's Certificate shall be made within the periods named in the Appendix "Period for honouring Interim Certificate" after such a Certificate has been delivered to the Employer;

The CE shall have power to withhold any Certificate if the work or any parts thereof are not being carried out to his satisfaction. However, if the final certificate is not issued within the period as mentioned under clause No 22.5, 26 due to Audit para by CTE etc., the amount involved for such items of deficient work as decided by Chief Engineer would be with held. Thesame would be allowed as agreed upon by CTE & the Chief Engineer and the final certificate would accordingly be issued and final bill passed. For such with held amount, a simple interest @6% per annum shall be paid to the Contractor along with the said payment. Such interest shall be calculated from the last date (as mentioned in Appendix to Condition of Contract) forhonouring final certificate till the date of payment.

The measurements and valuation in respect of the Contract shall be completed within the "period of Final Measurement" stated in the Appendix to conditions of contract or if not so stated then within six months of the completion of the contract works as defined in Clause (26)hereof. No further claim shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished.

The final certificate shall be based on the submission of final measurements or overall measurements of the work to be taken if so directed by Corporation's Engineer) with all relevant details similar to 22.1 above. The CE may direct the Contractor to re submit details ifthe same are found incomplete to issue the final certificate and his decision to accept the details is final and binding on the Contractor.

Final Certificate shall be issued by the CE after the conditions are met with as per 22.4, 22.5, 22.6 and 26 and Contractor's submission of No Claim Certificate cum receipt as per the formatgiven in Appendix to Condition of Contract.

23. SECURED ADVANCE AGAINST MATERIALS

The Contractor shall be entitled to be paid advance along with interim bill against materials which are not perishable and which are in the opinion of Corporation's Engineer, required for the works and have been brought on site for incorporation in the work but have not been so incorporated and are safeguarded against loss due to any cause whatsoever, (refer clause no- 17). The amount of such advance against materials shall be arrived at on the following basis:

- a) 80% of the market value of materials required for the work and brought on site.

OR

80% of the cost of such materials (brought on site) as derived from the relevant accepted tender rate for the particular item involving such materials; whichever is lower.

- b) Such advance payment made against materials shall be recovered from or adjusted from the interim bills as and when the materials are utilized in the work.

Examples of certain perishable materials on which no advance shall be paid are Sand, Paint, Bitumen, Hard Boards/Soft Boards and other paper products, Petroleum Products, Coal Tar, Insulating Boards etc. In case of dispute, the decision of the Chief Engineer on whether advance payment can be made against specific materials shall be final and binding.

24. UNFIXED MATERIALS AND EQUIPMENTS:

All tools, plants and materials brought to the site by the Contractor shall vest in the Employer and shall not be removed from the site of works except by permission of the Corporation's Engineer in writing. The Employer shall have a lien on these materials and plants.

25. REMOVAL OF IMPROPER WORK:

The Corporation's Engineer shall during the progress of the work have power to order in writing from time to time the removal from the work within such reasonable time or as may be specified in the order, of any materials, which in their opinion are not in accordance with the Specifications or instructions, the substitution of proper materials and the removal and proper re-execution of any work executed with materials or workmanship not in accordance with the Drawings and Specifications or Instructions and the Contractor shall forthwith carry out such an order at his own cost. In case of default on the part of the Contractor to carry out such an order, the CE shall have the power to employ other persons to carry out the same and all expenses consequent thereon or incidental thereto as certified by the EE shall be borne by the Contractor and may be deducted from any amounts due or that may become due to the Contractor.

26. VIRTUAL COMPLETION:

The work shall be completed in accordance with the Contract and to the entire satisfaction of Chief Engineer. All unused materials, tools, plants, scaffoldings, temporary structures, hutments and things belonging to the Contractor shall be removed and the site of works cleared of rubbish and all waste materials by the contractor at his own expenses and delivered up tidy to the employer. After completion of the work, the contractor will serve a written notice to the CE to this effect. The Chief Engineer after satisfying himself shall thereupon approve the virtual completion. The Defect Liability Period shall commence from the date of such certification.

27. DEFECTS AFTER COMPLETION:

The defects, shrinkage, settlements or other faults, which may appear within "the Defects Liability Period, stated in the "Appendix to the Conditions of Contract" or if not stated then, within 24 (Twenty Four) months after virtual completion of the work, arising on account of materials or workmanship not in accordance with the Contract shall, upon the directions in writing of the Corporation's Engineer and within such reasonable time specified therein, be amended and made good by the Contractor at his own cost unless the CE shall decide that he ought to be paid for such amendment and for making good, and in case of default, the CE may employ and pay

other persons to amend and make good such defects, shrinkage, settlement or other faults, and all damages, loss and expenses consequent thereon or incidental thereto shall be recovered from any monies due or that may become due to the Contractor. The CE may in lieu of such amending and making good by the Contractors, deduct from any money due or that may become due to the Contractor, a sum to be determined by the CE equivalent to the cost of amending such work. Should any defective work have been done or materials supplied by any Sub-Contractor employed on the work, who has been nominated or approved by the CE as provided in Clause No.16 the Contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the Contractor and been subjected to the provisions of this Clause and Clause No.2 hereof. The Contractor shall remain liable under the provision of this Clause notwithstanding the payment of any Certificate or the passing of any accounts.

28. PROVISIONAL SUMS. APPLICATION OF:

For all the work listed under items for which provisional sums are provided in the tender, the CE reserves the right to invite separate tenders or select or order from any manufacturer or firms at his discretion and reserves to himself the right of paying direct to persons or firms for any such work. The Contractor will not have any claims over these items, but if tenders are invited for such items, he will also be invited to quote along with others. If ordered by the CE, Contractor shall be required to carry out provisional sum items at the same conditions and rates as applicable for this Contract.

29. OTHER PERSONS ENGAGED BY THE EMPLOYER:

CE reserves the right to execute any work not included in this Contract, which he may desire to have carried out, by other persons and the Contractor shall allow all reasonable facilities and the use of his scaffolding and plant for the execution of such work, but is not required to provide any special plant or materials for the execution of such work except by special arrangement with the Employer. Such work shall be carried out in such manner as not to impede the progress of the work included in the Contract and the Contractor shall not be responsible for any damage or delay which may happen to or be occasioned by such work.

30. SUSPENSION BY THE CONTRACTOR:

If the Contractor except on account of any legal restraint upon the Employer preventing the continuance of the work, shall suspend the work or in the opinion of the CE shall neglect or fail to proceed with due diligence in the performance of his part of the Contract or if he shall make default in respect of Clause No.2, the Employer shall have the power to give notice in writing to the Contractor requiring that the work be proceeded within a reasonable manner and with reasonable dispatch. Such Notice shall purport to be a notice under this clause. After such notice is given, the Contractor shall not be at liberty to remove from the site of the work or from any ground contiguous thereto any plant or materials belonging to him, which shall have been placed thereon for the work and the Employer shall have a lien upon all such plant and materials to subsist from the date of such notice being given until the notice shall have been complied with. If the Contractor shall fail for 7 (seven) days after such notice given to proceed with the work as therein prescribed, the CE may proceed as provided in Clause No.31.

31. DETERMINATION OF CONTRACT BY EMPLOYER:

If the Contractor (being an individual or a firm) commit any “Act of Insolvency” or shall be adjudged as Insolvent or shall make an assignment or composition of the greater part in number or amount of his creditors or shall enter into a deed of assignment with his creditors, or being an Incorporated Company shall have an order made against him or pass an effective resolution for winding up either compulsorily or subject to the supervision of the Court or Voluntarily or if the official Assignee of the Contractor shall repudiate the Contract or if the official Assignee or the Liquidator in any such winding up shall be liable within 7 (seven) days

after notice to him requiring him to do so, to show to the reasonable satisfaction of CE that he is able to carry out and fulfill the Contract and if required by the CE to give security therefore or if the Contractor (whether an Individual Firm or Incorporated Company) shall suffer execution to be issued or if the Contractor shall suffer any payment under this Contract to be attached by or on behalf of any of the creditors of the Contractors or if the contractor shall assign or sublet the Contract without the consent in writing of the CE first obtained or if the Contractor shall charge or encumber this Contract or any payment due or which may become due to the Contractor there under, or if the CE shall certify in writing that in his opinion the Contractor,

- a) has abandoned the Contract, or
- b) has failed to commence the work, or has without any lawful excuse under these conditions suspended the progress of the work for 7 (seven) days after receiving from the CE written notice to proceed, or
- c) has failed to proceed with work with such due diligence and failed to make such due progress as would enable the work to be completed within the time agreed upon, or
- d) has failed to complete the work within the stipulated date including authorised extensions or
- e) has failed to remove the materials from the site or to pull down and replace the work within 7 (seven) days after receiving a written notice from the Corporation’s Engineer that the said materials or work were condemned or rejected or
- f) has neglected or failed persistently to observe and perform all or any of the acts, matters, or things, by this Contract to be observed and performed by the Contractor for 7 (seven) days after written notice shall have been given to the Contractor requiring the Contractor to observe or perform the same, or
- g) has to the detriment of good workmanship or in defiance of the CE’s instructions to the contrary sub-let any part of the Contract,

then and in any of the said causes, the CE notwithstanding any previous waiver, after giving 7 (seven) days notice in writing to the Contractors, determine the Contract, but without thereby affecting the powers of the CE or the obligations and liabilities of the Contractor, the whole of which shall continue to be in force as fully as if the contract has not been so determined and as if the work subsequently executed had been executed by or on behalf of the Contractor. And further, the Employer, his agents or servants, may enter upon and take possession of the work and all plant, tools, scaffolding, sheds, machinery, steam and other power, utensils and materials, lying upon the premises or the adjoining lands or road and use the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the work or by employing any other Contractors or other person or persons to complete the work, and the Contractor shall not in any way interrupt or do any act, matter, or thing to prevent or hinder such other Contractor, other persons or person employed for completing and finishing or using the materials and plant for the work. When the work shall be completed or as soon thereafter as convenient, the CE shall give a notice in writing to the Contractor to remove his surplus materials and plant and should the Contractor fail to do so within a period of 14 (Fourteen) days after receipt thereof by him, the Employer may sell the same by public auction and shall give credit to the Contractor for the amount so realised. The CE shall thereafter ascertain and certify in writing under his hand what (if anything) shall be due or payable to or by the Employer for the value of the said plant and materials so taken possession of by the Employer and the expense or loss which the Employer shall have been put to in getting the work to be so completed, and the amount, if any, owing to the Contractor and the amount, which shall be so certified shall thereupon be paid by the Employer to the Contractor or by the Contractor to the Employer, as the case may be and the Certificate of the CE shall be final and conclusive between the parties.

32. TERMINATION OF CONTRACT BY CONTRACTOR:

If payment of the amount payable by the Employer under any Certificate of the EE shall be in arrears as unpaid for 60 (sixty) days after notice in writing requiring payment of the amount with interest of aforesaid shall have been given by the Contractor to the Employer, or if the work be stopped for six months under order of the CE or by any injunction or other order of any Court of Law, then and in any of the said cases, the Contractor shall be at liberty to determine the Contract by notice in writing to the Employer and he shall be entitled to recover from the Employer payment for all the work executed and for any loss, he may sustain upon any plant or material supplied or purchased or prepared for the purpose of the Contract.

In arriving at the amount of such payment, the net rates contained in the Contractor's original tender shall be followed or where the same may not apply, valuation shall be made in accordance with Clause No.15 hereof.

33. DETERMINATION OF CONTRACT DUE TO ABANDONMENT OR REDUCTION IN SCOPE OF WORK:

If at any time after the acceptance of the tender, the Employer shall for any reasons whatsoever not require the whole or any part of the works to be carried out, the CE shall give notice in writing to the Contractor who shall have no claim to any payment of compensation or otherwise whatsoever on account of any profit or advantage which he might have derived from the Execution of the whole of the works.

The Contractor shall be paid at contract rates for the full amount of work executed and in addition:

- a. The cost at site of all surplus approved materials collected for incorporation in the work, which the Contractor does not wish to retain and which shall thereafter become the property of the Employer.
- b. Where the Contractor desires to retain the surplus of approved materials (excepting materials supplied by the Employer or obtained in Employer's name, which shall, in any case, be returned to the Employer) the cost of handling and cartage charges for removal from the site to a reasonable distance not exceeding 25 kms.
- c. If upon the determination of the Contract under this condition, the Contractor is of the opinion that he has suffered hardship by reason of the operation of these conditions, he may refer the circumstances with full details to the Chief Engineer, who on being satisfied that such hardship exists or has existed, shall make such allowance, if any as in his opinion is reasonable, and his decision shall be final, conclusive and binding. Only such of the above claims as are deemed reasonable and are supported by vouchers shall be admitted by the C.E.

34. DISPUTES TO BE FINALLY DETERMINED BY THE CHIEF ENGINEER:

The Instructions, Decisions, Opinion, Direction, Certificate or Valuation of the CE with respect to all or any of the matters under Clause (2), (3), (5), (6), (9), (14), (15), (18), (23), (27), (30), (31) and (33) hereof (which matters are herein referred to as EXCEPTED MATTERS) shall be final and conclusive and binding on the parties hereto and shall be without appeal. Any other Decision, Opinion, Direction, Certificate or Valuation of the CE or any refusal of the CE to give any of the same shall be subject to the right of Arbitration and review as given under Clause No. 36.

35. SECURITY DEPOSIT AND PERFORMANCE GUARANTEE:

Amount towards Security deposit(SD) shall be calculated as per details given under Serial No.9 of “APPENDIX TO CONDITIONS OF CONTRACT” in Part-B of the tender. Security Deposit can be either in Cash or in the form of Bank Guarantee(BG).

In case of cash option, the EMD shall be retained as part of Security Deposit and balance Security Deposit shall be accumulated through retentions from Running Account Bills at 7.5% (maximum) of gross amount of bill. In case of Bank Guarantee option, the Contractor shall furnish one Bank Guarantee for full amount of Security deposit valid till end of defects liability period OR, two Bank Guarantees of like amounts each equal to half the Security deposit; one valid till virtual completion and the other till end of defects liability period.

Performance Guarantee(BG) under 9 (b) “Appendix to Conditions of Contract” shall be only in the form of Bank Guarantee valid up to scheduled date of completion.

The Bank Guarantee/s shall be from any Nationalised / Scheduled Bank approved by the Chief Engineer, which is located at the Zonal Office Headquarters of L.I.C within whose jurisdiction the work falls or at the place of work.

Bank Guarantee/s (BGs) against Security Deposit (SD) and Performance Guarantee (PG) shall be executed as per the specimen pro-forma at Annexure C and D respectively. These guarantee/s shall be submitted within 21 (twenty one) days of issuance of letter of acceptance.

In case of failure by the contractor to furnish the Bank Guarantee against Performance Guarantee as per Cl.35.2 by the stipulated date or extended date if any, Employer shall without prejudice to any other right or remedy available in law, be at liberty to cancel the tender and forfeit the Earnest Money of Contractor absolutely.

50% of the Security Deposit (cash option) shall be refunded after the certificate of virtual completion is issued to the contractor & provided that the employer has no claim for forfeiture of part or whole of the said deposit.

Balance 50% of Security deposit will be refunded to the contractor after the satisfactory completion of the defects liability period, subject to deductions for any appropriations thereof required to be made by the employer as per the conditions of contract. If one Bank Guarantee in lieu of total Security Deposit is furnished, the same will be released only after the successful completion of Defects Liability period subject to any appropriations as aforesaid.

If two Bank Guarantees in lieu of Security deposit are furnished, the First Bank Guarantee will be released after the certificate of Virtual completion is issued to the contractor and second shall be released after the satisfactory completion of Defects Liability Period subject to any appropriations as aforesaid. Bank Guarantees towards Performance Guarantees (where applicable) shall be released after the Completion period.

Contractor shall keep the Security Deposit and Performance Guarantee, where applicable, replenished to its full value whenever any recovery or appropriation there from occurs. The employer reserves the right to do so from any money(s) due to the contractor lying with them. The Contractor should note that no interest will be allowed on any part of the Security deposit. No deductions will be effected from the bills when the total security deposit is paid in the form of Bank Guarantee(s) and the E.M.D shall be refunded after acceptance of Bank Guarantee(s).

In the event of failure by the contractor to submit Bank Guarantee(s) by the specified / extended date, recovery of Security deposit shall be effected from the R.A Bills. However, where the contractor fails to furnish Bank Guarantee against Performance Guarantee the matter shall be dealt with as per Cl. 35.5 above. In all cases of Bank Guarantees, there shall be further provision of claim period of 6 months. If the contract period gets extended for any reason whatsoever, the contractor shall obtain the required extensions to the Bank Guarantee(s).

36. SETTLEMENT OF DISPUTES. ARBITRATION:

All disputes and differences of any kind whatsoever arising out of or in connection with the Contract or the carrying out of the work (whether during the progress of the work or after its completion and whether before or after determination, abandonment or breach of the Contract) shall be referred by the Contractor to the Chief Engineer within 15 (fifteen) days of any such matter arising. The CE shall upon receipt of such reference convey his written instructions or decision within 30 (Thirty) days to the contractor. If the Contractor be dissatisfied with the decision of the CE, the Chief Engineer shall within 30 (Thirty) days shall make efforts to resolve the dispute through mutual discussion by an independent Departmental Committee constituted by ED (Engg). If the Contractor is still unsatisfied with the conclusion based on the committee's report on any matter other than EXCEPTED MATTERS, then and in such case, the contractor shall within 30 (Thirty) days after receiving notice of such decision, give a written notice to the Employer requiring that such matters in dispute (other than excepted matters) be arbitrated upon. Such written notice shall specify the matters which are in dispute or difference of which such written notice has been given and no other shall be and is hereby to be referred to the Arbitration. In case the Contractor fails to serve the written notice on any or all the issues in dispute within 30 (Thirty) days the decision conveyed by the CE shall be taken as final, binding and conclusive and shall not be open to arbitration.



Any disputes or differences that the employer may have with the contractor shall also be referred to Arbitration.

All disputes between the parties to the contract (other than those for which the decision of the CE or any other person is by the contract expressed to be final & binding) shall after written notice by either party to the contract to the other of them be referred to sole arbitration by an Arbitrator to be appointed by the Executive Director (Engineering), which shall be final and binding.

If the arbitrator so appointed resigns his appointment or vacates his office or is unable or unwilling to act due to any reason whatsoever, the appointing authority shall appoint a new arbitrator in his place. Unless both the parties agree in writing, reference of such disputes to arbitration shall not take place until after the completion or alleged completion of the work or termination or determination of contract.

The Sole Arbitrator shall determine all matters in disputes other than EXCEPTED MATTERS (referred in Cl.No.34) which shall be referred to the Sole Arbitrator. The Arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act 1996 or any statutory modifications thereof. The Contractor hereby also agrees that Arbitration under this Clause shall be a condition precedent to any right of action under the Contract.

GENERAL INSTRUCTIONS TO CONTRACTORS FOR WORK**1. DRAWINGS:**

Drawings shall be kept open for inspection at places as mentioned in the letter to the contractor from the Chief Engineer. Drawings generally include the site plan, floor plans, elevations and sections of the proposed work.

2. INSPECTION OF SITE:

The Tenderer shall visit and examine the site of work and satisfy himself as to the nature of the existing roads or other means of communication, the character of the soil and of the excavations, the correct dimensions of the work and facilities for obtaining materials and shall obtain generally his own information on all matters affecting the execution of the work. No extra charge made, in consequence of any misunderstanding or incorrect information on any of these points or on the grounds of insufficient description will be allowed. All expenses incurred by the Tenderer in connection with obtaining information for submitting this tender including his visits to site and efforts in compiling the Tender shall be borne by the Tenderer and no claims for reimbursement thereof shall be entertained.

3. WHOLE WORK TO BE COMPLETED IN THE SPECIFIED COMPLETION PERIOD:

The whole work is to be completed within the completion period stated in the Appendix to Conditions of Contract or the extended date of completion, if any. The Contractor will be required if necessary, to work overtime to complete the work by the stipulated date. No extra will be allowed on the Contract sum for such overtime work.

4. TIME AND PROGRESS CHART:

A time and Progress Chart is attached to this Contract for guidance. The Contractor shall submit a time and progress chart (**CPM/PERT/Qualified Bar Chart**) fitted within the specified overall period of completion (as stated in Appendix to Conditions of Contract) within **10 (Ten)** days of the communication of letter of intent, to the Corporation's Engineer. In case the Contractor does not come forward for any change in the Time and Progress Chart as provided in the General Instructions to the Contractors, it shall be presumed that the time and Progress Chart is accepted in full in letter and spirit to maintain the pace of the progress of work.

Ancillary work should be so started that all such work is completed before the specified overall contractual period of completion. The Contractor shall assume full responsibility for any delay in delivery of materials by Merchants or nominated Sub-Contractors not having completed the work in accordance with the Time and Progress Chart. Such excuses shall not form any criterion for extension of time, or any claims by the Contractor.

5. BENCHES:

The Contractor is to construct and maintain proper benches to indicate the inter-section of all main walls in order that the lines and levels may be accurately checked at all times. The Contractor shall provide suitable stones with flat tops and build the same in concrete for temporary or permanent benchmarks. All the pegs for setting out the work and fixing the necessary levels required for the execution thereof shall, if desired by the Corporation's Engineer likewise, be built in masonry at such places and in such a manner as the Corporation's Engineer may determine. Contractors' rates shall cover for these factors.

6. DRAWINGS ON SITE:

The Drawings maintained on the site are to be carefully mounted on boards of appropriate size and covered with a coat of approved transparent varnish or laminated at the cost of the Contractor. They are to be protected from the ravages of termites, ants, silver fish and other insects.

7. ORDER OF WORK:

The Chief Engineer reserves the right to fix the order in which the various items of work involved in this Contract is to be executed and Contractor shall comply with the same. There shall be no extra claims on account of this.

8. WORKMANSHIP:

The Work calls for a high standard of workmanship combined with speed.

9. REJECTED WORKMANSHIP OR MATERIALS:

Any workmanship, or materials not complying with the specific requirements or approved samples, or which have been damaged, contaminated or deteriorated, must be removed immediately from the site and replaced at the Contractor's expense as directed.

10. QUOTED RATES:

The rate is percentage tender. If called upon by the Chief Engineer, the details of the percentage quoted by the contractor has to be substantiated with the supporting documents.

If called upon by the Chief Engineer, the details analysis of quoted rate shall be submitted by the Contractor. The Chief Engineer is not bound to recognize Contractor's analysis and reserves the right to reject abnormal high rates quoted by the Contractor. In case there are inconsistencies in the quoted rate of same description, in the different parts of Schedule of Quantities, the lowest of such rates shall be considered unless Chief Engineer finds that there is justification for such inconsistent rates.

11. WATCHING AND LIGHTING:

The Contractor from the time of being placed in possession of the site must allow for watching, lighting and protecting the work, the site and surrounding, properly by day and night on all days including Sundays or other holidays, at his own cost.

12. WATER:

The rates quoted by the Contractors shall include for providing all water required for the work including that required by special tradesmen and Sub-Contractors and pay all charges required by Local Municipal or other Authorities. Water must be clean, fresh, pure and free from earth, vegetable or organic matters, acid or alkaline substance in solution or suspension. The Contractors shall make their own arrangements for water supply. If supply from the Municipality or other local bodies be inadequate, the Contractor should provide tube well or wells or open well at his own cost. The Contractors must execute any temporary plumbing and pay all fees and charges. All health regulations in force shall be strictly observed by the Contractor and pay all necessary charges.

However, water is available in surplus with LIC, the same may be permitted for use in work and in such case necessary recovery will be effected from contractor's bill as detailed below:

Recovery of water charges from Contractors bill if used from LIC source @ 0.25% of the Gross value of work done.

13. ELECTRICITY:

The Contractor shall arrange with the concerned Electricity Supply Authorities for a temporary meter and supply to the site and shall provide all temporary wiring, power and lighting points for the whole of the works and clear away when no longer required. He shall pay all charges for the same and for electricity consumed, including that consumed by Sub-Contractors. The Contractor should submit disconnection & no dues certificate from the supplying authority along with their final bill.

However, Where existing source of Electricity is available in surplus with LIC, the same may be permitted for use in work and in such case necessary recovery will be effected from contractor's bill as detailed below:

Recovery of Electricity charges from Contractors bill if used from LIC source @ 0.25% of the Gross value of work done.

14. SECURITY AND PROTECTION:

The Contractor shall at his cost, provide any necessary temporary enclosures, gates, entrances, etc. for the protection of the work and materials and for altering and adapting same as may be required and removing at completion of the works and making good all works disturbed.

During inclement weather, the Contractor shall suspend concreting or plastering for such time as the Corporation's Engineer may direct and shall protect such work in course of execution from damage by approved measures.

Should the work be suspended by reason of rain, strike, lock-outs or any other cause, the Contractor shall at his cost take all precautions necessary for the protection of the work and shall make good any damage arising from any of these causes.

The Contractor shall at his expense cover-up and protect from injury from any cause, all new work and supply all temporary doors protection to windows, and any other requisite protection for the whole work executed, whether by himself or special tradesmen of Sub-Contractors and any damage caused must be made good by the Contractor at his own expense.

All fences, trees, shrubs, grasses, lawn and other surfaces around the buildings or approaches thereto, which are required to be maintained are to be kept free from damage due to operations in connection with the work, at Contractor's expense. The Contractor shall, at his expense, protect all projecting sills, jambs, copings, stone or concrete treads and moldings and all concrete steps, wood work and joinery and the like from injury during the progress of the work.

The Contractor shall at his cost, protect joinery and make good all damages to the same from any cause whatsoever during the performance of the Contract and leave perfect to the satisfaction of the CE at completion. Before giving possession, the Contractor must see that all doors, windows and ventilation etc. work easily and shall make all necessary adjustments for such smooth working.

15. SANITATION:

The Contractor shall at his cost provide adequate latrine facilities and keep the same in a clean and hygienic condition to the satisfaction of the Public Health Authorities and shall cause such latrine and night soil to be cleared away whenever necessary and shall make good all works disturbed by these conveniences.

16. MINIMUM WAGES ACT:

The Contractor shall pay rates of wages and observe hours of work and conditions of employment to existing rules under Minimum Wages Act. Further, it shall be Contractor's responsibility to ensure that he pays his workmen wages, which are not lower than the minimum prescribed by the Union Government and State Government in which area this Contract, is being operated.

17. SHEDS FOR MATERIALS:

The Contractor shall at his cost provide and maintain proper approved sheds for the storage and protection of materials etc. and other work that may be executed on the site including the tools and materials of Sub-Contractors and remove on completion. Sheds for storage of Cement are to have floors raised from the ground.

18. OBJECTS OF VALUE AND ANTIQUITY FOUND ON SITE:

All objects of value or antiquity found on the site shall remain the property of the Employer and such findings shall be immediately reported to the Chief Engineer.

19. WORKS AND SITE TO BE KEPT AND DELIVERED UP CLEAN:

All shavings, cuttings and other rubbish as it accumulates from time to time during the progress of the work and at completion, including that of Sub-Contractor and special tradesman to be cleared and carted away. All rejected materials shall be removed. Contractor's quoted rates shall allow for these factors.

20. SIGN BOARD AND HOARDINGS:

The Contractor shall not affix or place any placards or advertisement of any description or permit the same to be affixed or placed in or upon any hoarding, gantry, buildings or structure other than that approved by the Chief Engineer.

21. SCIENTIFIC AND MEASURING INSTRUMENTS:

Theodolite, levels, prismatic compass/chain, steel and metallic tapes and all other surveying instruments found necessary on the works, shall be provided by the Contractor at his expense for the due performance of this Contract as instructed by the Corporation's Engineer.

22. TOOLS FOR MASONS:

Every bricklayer or plasterer on the work shall be provided with suitable level, battens, trowels, wooden floats and breaking hammers for cutting bricks and templates, to enable him to carry out the work in a neat and workman like manner and each gang of brick layers or plasterers not exceeding six in number shall be provided with a suitable measuring rule, a plumb bob, a spirit level and a square in addition to the above mentioned, all to be to the approval of the Site Engineer.

23. CONTRACTOR'S MISTRIES AND SUPERVISORS:

The Contractor's Mistries and the Supervisors on the works shall carry with them a suitable measuring rule, a measuring tape, a spirit level, a plumb bob and a square and shall check the work of the bricklayer, plasterers, and carpenters and joiners to see that the work is being done according to the Drawings and Specifications. The Corporation's Engineer/Supervising Staff will use any and all measuring instruments or tools belonging to the Contractor as he chooses, while checking the work executed or being executed on the works.

24. NO OVERLOADING OF SLABS:

Floors of buildings under construction shall not be loaded by stacks of materials during construction without the prior approval of Corporation's Engineer. It is important that no load comes on the reinforced concrete floors until they are at least three weeks old and at no time must the load placed upon them exceed the load for which they are designed.

25. ALTERNATIVE ITEMS:

In regard to alternative items, if any, specified in the Schedule of Quantities, Contractor should note that the Employer reserves the right to order the Principal item or its alternatives at the CE's discretion.

26. ATTENDANCE ON SUB-CONTRACTORS:

Co-ordination: The Contractor shall be responsible for the co-ordination of all the work including that of Sub-Contractors, for arranging runs of all services and working to the requirements and layout of the specialist trades, in all matters necessary for the complete execution of the work.

Rate quoted by the Contractor shall be inclusive of all attendance on Sub-Contractors or other Contractors nominated by the Employer. Contractor must allow for provision of the use of his scaffolding to Sub-Contractors and for its retention until such time all relevant Sub-Contract works are completed.

The Contractor shall accept liability for and bear the cost of the supply of all necessary water, electricity, lighting, watching etc. for the Sub-Contractors work. The Contractor must allow in his quoted rate for making good any holes and chases left by the Sub-Contractors or other Contractors nominated by the Employer before the Builder's Work is completed and handed over

The Contractors shall, at all times, give access to workmen employed by the local or other authorities or any men directly 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 directed by the Chief Engineer, as may be required, to enable such workmen to lay or fix pipes, electric wiring, special fittings etc. Contractor's quoted rate shall allow for these factors.

27. OCCUPATION BY EMPLOYER:

The Employer reserves the right to occupy the works by sections as completed, as may be considered by the Chief Engineer both practicable and reasonable and without hindrance to the Contractor's progress.

28. TAXES, DUTIES, LEVIES AND DEDUCTION AT SOURCE:

The Contractors shall be responsible to pay all statutory levies /taxes imposed by the State and Central Government from time to time. It is deemed that the rates quoted by the contractor for each item of works includes all applicable taxes except GST on works contract which shall be paid by LIC as applicable from time to time as per notification of Govt of India. No reimbursement whatsoever shall be made to the contractors on account of any taxes or duties or increase in the taxes/duties by act of any legislation except GST which will be paid separately along with bill payment as per applicable rate of GST at the time of bill.

The rates quoted are inclusive of all taxes, transportation charges, loading and unloading at all points, transit insurance and other incidentals charges but excluding GST. Deduction at source of Income tax & surcharge of GST, etc. shall be made by LIC of India as per the provisions prevailing from time to time from the Running Account / Final bill and remitted to the concerned taxation Authorities on behalf of the contractor.

SPECIAL CONDITION REGARDING GST : "All the Participating Bidders must have valid GST Registration Certificate of a particular State / Union Territory at the time of submission of the Bid. GST registration should be obtained by a taxable person under GST in each of the state or UT, from where the taxable supply of goods or services is made. As such, vendor, if making inter-state supplies he shall charge IGST and if making intra-state supplies he shall charge CGST plus SGST / UTGST in his invoice.

**Annexure-A****PROFORMA OF ARTICLES OF AGREEMENT**

ARTICLES OF AGREEMENT made at.....this.....day of20..... between THE LIFE INSURANCE CORPORATION OF INDIA, a body corporate constituted and established by the Life Insurance Corporation Act, 1956 (Act 31 of 1956) and having its Central Office at "Yogakshema", Jeevan Bima Marg, Mumbai and its Zonal Office athereinafter called the Employer (which expression shall include its successors and assignees wherever context or meaning shall so require or permit) of the one part and M/s..... (hereinafter called "**The Contractor**") of the other part.

WHEREAS the Employer is desirous of constructing the..... and has prepared drawings and specifications and the Schedule of Quantities which have been signed by or on behalf of the parties hereto.

AND WHEREAS the Contractor has agreed to execute upon and subject to the conditions and instructions set forth herein (hereinafter referred to as "**the said Conditions**") the works shown upon the said drawings and /or described in the said Specifications and included in the said Abstract Schedule of Quantities amounting to the contract sum of Rshereinafter referred to as "**the said contract Amount**".

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. In consideration of the said Contract Amount to be paid at the times and in the manner set forth in the said conditions, the contractor shall upon and subject to the said Conditions execute and complete the works shown upon the said Drawings and described in the Specifications and/or the priced Schedule of Quantities.
2. The Employer shall pay the contractor the said Contract Amount or such other sum as shall become payable for the items and in the manner hereinafter specified in the said conditions.
3. The said Conditions and Appendices thereto shall be read and construed as forming part of this Agreement, and the parties hereto shall respectively abide by and submit themselves to the conditions and perform the Agreement in their part respectively in such conditions contained.
4. All disputes arising out of or in any way concerned with this Agreement shall be deemed to have arisen in_____and only the Courts in_____shall have jurisdiction to determine the same.
5. The contract comprises: -
 - i) Tender Documents Serial Pages.....
 - ii) Subsequent Correspondence Serial Pages.....
 - iii) Architectural Drawings Serial Pages



6. Only () alterations have been made in these documents and as evidence that these alterations were made before the execution of Contract Agreement, they have been initialled by the contractor and.....

Engineer, _____ Zone, Life Insurance Corporation of India
_____. The said officer is hereby authorised to sign and initial on the Employer's behalf, the documents forming part of this contract.

7. IN WITNESS WHEREOF THE Official Seal of the LIFE INSURANCE CORPORATION OF INDIA, _____ ZONE, was thereto affixed and signed on its behalf by the Chief Engineer and by _____ on behalf of the Contractor/s on the dates respectively mentioned against their signatures in the presence of the witnesses whose signatures are also appended.

In the presence of

CHIEF ENGINEER

1. Signature :

FOR AND ON BEHALF OF THE
LIFE INSURANCE CORPORATION
OF INDIA

Name :

Address :
.....

Date :

2. Signature :

Name :

Address :

In the presence of

1. Signature :

FOR AND ON BEHALF
OF THE CONTRACTOR
M/S
Date :

Name :

Address :
.....

2. Signature :

Name :

Address :
.....

ANNEXURE "B"FORM OF BANK GUARANTEE IN LIEU OF EARNEST MONEY DEPOSIT

In consideration of the Life Insurance Corporation of India, Western Zonal Office, Mumbai (hereinafter called the Employer) having agreed to exempt (hereinafter called the said Contractor) from the requirement of payment in cash as per terms and conditions of invitation to tender attached to letter No..... issued by the Employer to the said Contractor.....

..... (Hereinafter called the said agreement) for EARNEST MONEY DEPOSIT for the due fulfillment by the said Contractor of the terms and conditions contained in the said agreement on production of a bank guarantee for Rs.....(Rupees. Only) we,

..... do hereby undertake to indemnify and keep indemnified the Employer to the extent of Rs.....against any loss or damage caused to or suffered by the Employer by reason of any breach by the said Contractor of any of the terms and conditions contained in the said agreement.

1. We, the said Bank further agree that the Corporation shall be the sole judge of and as to whether the said Contractor has committed any breach of breaches of any of the terms and conditions of the said contract and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation on account thereof and the decision of the Corporation that the said Contractor has committed such breach or breaches and as to the amount or amount, of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation from time to time shall be final and binding on us.
2. The corporation shall have the fullest liberty without affecting in any way the liability of the Bank under the Guarantee or Indemnity from time to time to vary any of the CONTRACTOR terms and conditions of the said contract or to extend time of performance by the said Contractor or to postpone for any time and from time to time any of the powers exercisable by it against the said Contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said contract, or securities available to the Corporation and the said Bank shall not be released from its liability under these presents by any exercise by the Corporation of the liberty with reference to the matters aforesaid or by reason of time being given to the said Contractor or any other forbearance, act or omission on the part of the Corporation or any indulgence by the Corporation to the said Contractor or of any other matter or thing whatsoever, which under the law relating to sureties would but for this provision have the effect of so releasing the Bank from its such liability.
3. It shall not be necessary for the Corporation to proceed against the Contractor before proceeding against the Bank and Guarantee and indemnity herein contained shall be enforceable against the said bank, notwithstanding any security which the Corporation may have obtained or obtain from the Contractor at the time when proceedings are taken against the Bank hereunder be outstanding or unrealised;
4. Notwithstanding anything in any of the foregoing clauses the liability of the Bank under this Guarantee shall not exceed Rs. _____ (Rupees _____ only) plus interest, costs, etc., The Guarantee and indemnity shall remain in force till _____. If any extension of time be granted to the Contractor, we undertake to extend the guarantee and indemnity. Unless a claim or demand under this Guarantee and indemnity is made or presented to the Bank within six months from the expiry date, all the rights of the corporation under this guarantee and indemnity shall cease and the Bank shall be released and discharged from the liability hereunder.



We, the said Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the said agreement have been fully paid and its claims satisfied or discharged or till the Employer certifies that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor and accordingly discharges the guarantee subject however that the Employer shall have no rights under this bond after the expiry of the requisite period as per tender condition.

Not with standing anything contained in any of the foregoing clauses the liability of the Bank under this Guarantee shall not exceed Rs. _____ (Rupees _____ Only). The Guarantee shall remain in force till _____. Unless a claim or demand under this Guarantee is made or presented to the Bank within three months from the expiry date, all the rights of the Corporation under this guarantee shall cease and the Bank shall be released and discharged from the liability hereunder.

We, the said Bank lastly undertake not to revoke this guarantee and indemnity during its currency except with the previous consent of the Corporation in writing and agree that any change in the constitution of the said Contractor or the said Bank shall not discharge our liability hereunder.

For and on behalf of the Bank

(Name and Designation)

The above Guarantee is accepted by the Life Insurance Corporation of India. For and on behalf of the LIC of India

(Name and Designation)

Date:

NOTE:

(*) FOR COMPANIES

M/s./Shri _____ a company under the companies Act 1956 and having its registered office at _____ in the State of _____ (hereinafter called "the said Contractor" which expression shall unless the context requires otherwise include its successors and assignees.

**ANNEXURE – 'C'**

LIFE INSURANCE CORPORATION OF INDIA
(Refer Clause No. 35 of Conditions of Contract)
FORM OF BANK GUARANTEE IN LIEU OF SECURITY DEPOSIT
IN INDIVIDUAL CONTRACTS

To
THE LIFE INSURANCE CORPORATION OF INDIA

In consideration of the Life Insurance Corporation of India having its _____ Zonal Office at
_____ in the State of _____

(hereinafter called '**the Corporation**' which expression shall unless repugnant to the subject or context include its successors and assignees) having agreed under terms and conditions of contract (vide its acceptance letter No. _____ dated _____) made between

*

(hereinafter called the said Contractor) and the Corporation in connection with
_____ (hereinafter called '**the said contract**') to
accept a Deed of Guarantee and Indemnity as herein provided for Rs. _____
_____ from the

**

_____ in lieu of the Security Deposit to be made
by the contractor and/or in lieu of the deduction to be made from the Contractor's bills, for the due fulfillment
by the said contractor of the terms and conditions contained in the said contract, we the

_____ (hereinafter referred to as '**the said Bank**') and having our office at _____

do hereby undertake and agree to indemnify and keep indemnified the Corporation from time to time to the extent of Rs. _____ (Rupees _____ only) against any loss or damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation by reason of any breach or breaches by the said contractor in respect of the said contract or of any of the terms and conditions contained in the said contract, or in respect of all its claims for money and / or material found due and recoverable from the said contractor and to unconditionally pay the amount claimed as such by the Corporation on demand and without demur to the extent aforesaid.

2. We, the said Bank further agree that the Corporation shall be the sole judge of and as to whether the said contractor has committed any breach or breaches of any of the terms and conditions of the said contract and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation from time to time on account thereof and the decision of the Corporation in this respect shall be final and binding on us.



3. The Corporation shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or Indemnity from time to time to vary any of the terms and conditions of the said contract or to extend time of performance by the said contractor, or to postpone for any time and from time to time any of the powers exercisable by it against the said contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Contract or securities available to the Corporation and the said Bank shall not be released from its liability under these presents by any exercise by the Corporation of the liberty with reference to the matters aforesaid or by reason of time being given to the said contractor or any other forbearance, act or omission on the part of the Corporation or any indulgence by the Corporation to the said contractor or of any other matter or thing whatsoever, which under the law relating to sureties would but for this provision have the effect of so releasing the Bank from its liability.

4. It shall not be necessary for the Corporation to proceed against the contractor before proceeding against the Bank and the Guarantee and Indemnity herein contained shall be enforceable against the said Bank, notwithstanding any security which the corporation may have obtained or obtain from the contractor shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.

5. Notwithstanding anything contained in any of the foregoing clauses the liability of the Bank under this Guarantee shall not exceed Rs. _____ (Rupees _____ only). The guarantee shall remain in force till _____. If any extension of time be granted to the contractor, we undertake to extend the guarantee with the consent of the contractor. Unless a claim or demand under this guarantee is made or presented to the Bank within six months from the expiry date, all the rights of the Corporation under this Guarantee shall cease and the Bank shall be released and discharged from all liability hereunder.

6. We, the said bank lastly undertake not to revoke this guarantee and indemnity during its currency except with the previous consent of the Corporation in writing and agree that any change in the constitution of the said contractor or the said Bank shall not discharge our liability hereunder.

For and on behalf of the Bank

(Name and Designation)

The above Guarantee is accepted by the
LIFE INSURANCE CORPORATION OF INDIA.

For and on behalf of the LIC of India
(Name and Designation)

Dated:

**Note No.1 * : FILL IN AS APPLICABLE****A) For Proprietary concerns:-**

Shri _____ son of _____ resident of _____
_____ carrying on business under the name and style of _____
_____ at _____
(hereinafter called **'the said contractor'** which expression shall unless the context requires otherwise include his heirs, executors, administrators and legal representative).

OR**B) For Partnership concerns:-**

1. Shri _____
son of _____
resident of _____

2. Shri _____
son of _____
resident of _____

carrying on business in partnership under the name and style of _____
_____ of _____ at _____
_____ (hereinafter collectively called **'the contractor'** which expression shall unless the context requires otherwise include each of them and their respective heirs, executors, administrators and legal representatives)

OR**C) For companies :-**

M/S / Shri _____ a company under the Companies Act 1956 and
having its registered office at _____ in the state of _____
(hereinafter called **'the said contractor'** which expression shall unless the context requires otherwise include its successors and assignees).

Note No.2:

**** Please fill in the name and address of Bank.**

**ANNEXURE – 'D'****LIFE INSURANCE CORPORATION OF INDIA
(Refer Clause No. 35 of Conditions of Contract)****FORM OF BANK GUARANTEE FOR PERFORMANCE GUARANTEE
IN INDIVIDUAL CONTRACTS**

To
THE LIFE INSURANCE CORPORATION OF INDIA

In consideration of the Life Insurance Corporation of India having its _____ Zonal Office at
_____ in the State of _____

(hereinafter called '**the Corporation**' which expression shall unless repugnant to the subject or context include its successors and assignees) having agreed under terms and conditions of contract (vide its acceptance letter No. _____ dated _____) made between

_____ *

(hereinafter called the said Contractor) and the Corporation in connection with
_____ (hereinafter called '**the said contract**') to accept a Deed of Guarantee and Indemnity as herein provided for Rs. _____
from the _____ ** _____ for the due fulfilment by the said contractor of the terms
and conditions contained in the said contract, we the
_____ (hereinafter referred to as '**the said Bank**') and having our
office at _____ do hereby undertake and agree to indemnify and
keep indemnified the Corporation from time to time to the extent of Rs. _____ (Rupees
_____ only) against any loss or damage, costs, charges and expenses
caused to or suffered by or that may be caused to or suffered by the Corporation by reason of any breach or
breaches by the said contractor in respect of the said contract or of any of the terms and conditions contained
in the said contract, or in respect of all its claims for money and /or material found due and recoverable from
the said contractor and to unconditionally pay the amount claimed as such by the Corporation on demand and
without demur to the extent aforesaid.

2. We, the said Bank further agree that the Corporation shall be the sole judge of and as to whether the
said contractor has committed any breach or breaches of any of the terms and conditions of the said contract
and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to
or suffered by the Corporation from time to time on account thereof and the decision of the Corporation in this
respect shall be final and binding on us.



3. The Corporation shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or Indemnity from time to time to vary any of the terms and conditions of the said contract or to extend time of performance by the said contractor, or to postpone for any time and from time to time any of the powers exercisable by it against the said contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Contract or securities available to the Corporation and the said Bank shall not be released from its liability under these presents by any exercise by the Corporation of the liberty with reference to the matters aforesaid or by reason of time being given to the said contractor or any other forbearance, act or omission on the part of the Corporation or any indulgence by the Corporation to the said contractor or of any other matter or thing whatsoever, which under the law relating to sureties would but for this provision have the effect of so releasing the Bank from its liability.

4. It shall not be necessary for the Corporation to proceed against the contractor before proceeding against the Bank and the Guarantee and Indemnity herein contained shall be enforceable against the said Bank, notwithstanding any security which the corporation may have obtained or obtain from the contractor shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.

5. Notwithstanding anything contained in any of the foregoing clauses the liability of the Bank under this Guarantee shall not exceed Rs. _____ (Rupees _____ only). The guarantee shall remain in force till _____. If any extension of time be granted to the contractor, we undertake to extend the guarantee with the consent of the contractor. Unless a claim or demand under this guarantee is made or presented to the Bank within six months from the expiry date, all the rights of the Corporation under this Guarantee shall cease and the Bank shall be released and discharged from all liability hereunder.

6. We, the said bank lastly undertake not to revoke this guarantee and indemnity during its currency except with the previous consent of the Corporation in writing and agree that any change in the constitution of the said contractor or the said Bank shall not discharge our liability hereunder.

For and on behalf of the Bank

(Name and Designation)

The above Guarantee is accepted by the

LIFE INSURANCE CORPORATION OF INDIA.

For and on behalf of the LIC of India

(Name and Designation)

Dated:

Note No.1 * : FILL IN AS APPLICABLE

**A) For Proprietary concerns:-**

Shri _____ son of _____ resident of _____
_____ carrying on business under the name and style of _____
_____ at _____
(hereinafter called **'the said contractor'** which expression shall unless the context requires otherwise include his heirs, executors, administrators and legal representative).

OR**B) For Partnership concerns:-**

1. Shri _____
son of _____
resident of _____
2. Shri _____
son of _____
resident of _____

carrying on business in partnership under the name and style of _____
_____ of _____ at _____
_____ (hereinafter collectively called **'the contractor'** which expression shall unless the context requires otherwise include each of them and their respective heirs, executors, administrators and legal representatives)

OR**C) For companies :-**

M/S / Shri _____ a company under the Companies Act 1956 and
having its registered office at _____ in the state of _____
(hereinafter called **'the said contractor'** which expression shall unless the context requires otherwise include its successors and assignees).

Note No.2:

**** Please fill in the name and address of Bank.**

**ANNEXURE – 'E'****LIFE INSURANCE CORPORATION OF INDIA**

(Refer clause 37 of Conditions of Contract)

FORM OF BANK GUARANTEE TO SECURE A LUMP SUM ADVANCE

To

THE LIFE INSURANCE CORPORATION OF INDIA

In consideration of the Life Insurance Corporation of India having its _____ Zonal Office at _____ in the State of _____ (hereinafter called 'The Corporation' which expression shall unless repugnant to the subject or context include its successors and assignees) having agreed under the terms and conditions of contract vide its acceptance letter No. _____

_____ dated _____ made between _____

_____ *

hereinafter called the said Contractor and the Corporation in connection with _____ (hereinafter called the said 'contract'), to make at the request of the contractor a lump sum advance of Rs. _____ for utilizing it for the purpose of contract on his furnishing a guarantee acceptable to the Corporation, we the

_____ ** Bank (hereinafter referred to as 'the said Bank') a company under the companies Act, 1956 and having our registered office at _____ do hereby guarantee the due recovery by the Corporation of the said advance together with interest and costs thereon according to the terms and conditions of the said contract. If the said contractor fails to utilize the said advance for the purpose of the contract and/or the said advance together with interest thereon as aforesaid is not fully recovered by the Corporation, we the said Bank hereby unconditionally and irrevocably undertake to pay to the Corporation on demand and without demur to the extent of the sum of Rs. _____.

1. We, the said Bank further agree that the Corporation shall be the sole judge of and as to whether the said contractor has not utilized the said advance or any part thereof for the purpose of the said contract and the extent of loss or damage caused to or suffered by The Corporation on account of the said advance together with interest and costs thereon not being recovered in full and the decision of the Corporation in this respect, shall be final and binding on us.



2. The Corporation shall have the fullest liberty without affecting in anyway the liability of the Bank under this Guarantee or Indemnity, from time to time to vary any of the terms and conditions of the said contract or the advance or to extend time of performance by the said contractor or to postpone for any time and from time to time any of the powers exercisable by it against the said contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said contract or the advance or securities available to the Corporation and the said Bank shall not be released from its liability under these presents by any exercise by the Corporation of the liberty with reference to the matters aforesaid or by reason of time being given to the said contractor or any other forbearance, act or omission on the part of the Corporation or any indulgence by the Corporation to the said contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the Bank from its such liability.
3. It shall not be necessary for the Corporation to proceed against the contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding any security which the Corporation may have obtained or obtain from the contractor shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.
4. Notwithstanding anything to the contrary hereinbefore contained the Bank's liability hereunder shall not exceed Rs. _____ (Rupees _____) in the aggregate. This Guarantee shall remain in force till the __ day of the year 20... and the Bank's liability hereunder will cease to be operative unless any claim is lodged with the Bank within 6 (six) months thereafter.
5. We, the said Bank lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the Corporation in writing and agree that any change in the constitution of the said contractor or the said Bank shall not discharge our liability hereunder.

For and on behalf of the Bank.

(Name and Designation)

The above Guarantee is accepted by the Life Insurance Corporation of India.

For and on behalf of the

LIFE INSURANCE CORPORATION OF INDIA

(Name and Designation)

Note No.1 * : FILL IN AS APPLICABLE

**A) For Proprietary concerns:-**

Shri _____ son of _____ resident of _____ carrying on business under the name and style of _____ at _____ (hereinafter called 'the said contractor' which expression shall unless the context requires otherwise include his heirs, executors, administrators and legal representative).

OR**B) For Partnership concerns:-**

1. Shri _____
son of _____
resident of _____
2. Shri _____
son of _____
resident of _____

carrying on business in partnership under the name and style of _____ of _____ at _____ (hereinafter collectively called 'the contractor' which expression shall unless the context requires otherwise include each of them and their respective heirs, executors, administrators and legal representatives)

OR**C) For companies:-**

M/S / Shri _____ a company under the Companies Act 1956 and having its registered office at _____ in the state of _____ (hereinafter called 'the said contractor' which expression shall unless the context requires otherwise include its successors and assignees).

Note No.2 ** : Please fill in the name and address of Bank.



LIFE INSURANCE CORPORATION OF INDIA
LETTER TO CONTRACTOR FROM CHIEF ENGINEER

To,

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

Dear Sir / Sirs,

SUB: E-TENDER FOR CIVIL & INTERIOR WORKS INCLUDING MODULAR FURNITURE, CHAIRS, ELECTRICAL INSTALLATION, DATA & TELEPHONE CABLING, FIRE ALARM SYSTEMS FOR PROPOSED MODERNIZATION OF BRANCH OFFICE 883 AND 904 AT GROUND FLOOR/MEZZANINE FLOOR OF ORIENTAL BUILDING, FORT, MUMBAI, MAHARASHTRA.

1) We hereby publish the TENDER on e-Tendering Portal (Website) through <http://www.tenderwizard.com/LIC> in **Electronic Mode** hereinafter referred as “e-Tendering” and consisting of following :

- (a) **BID I : EMD BID**
- (b) **BID II : PREQUALIFICATION BID**
- (c) **BID III : FINANCIAL BID**

Please note that copy of above e-Tender can be downloaded from above portal (website) and should be mandatorily submitted in **Online Electronic Mode** hereinafter referred as “**Online Offer**”. The submission of Online offer duly Encrypted & Digitally Signed on above portal should be in prescribed Electronic Forms (Online) available on above portal for respective tender in Online Envelope(s) on or before **As per the Key Dates mentioned in the tender document and online portal for above tender.**

2) The drawings for the work will be available for inspection at the following Office:

- (a) Office of **Chief Engineer, Western Zonal Office, Engineering Department, Life Insurance Corporation of India, 1st floor, West Wing, Yogakshema, JB Marg, Nariman point, Mumbai-400021**

3) The bidders should submit the required **Tender Fee of Rs. 2,000/-+ 18% GST (non-refundable) in the form of Demand Draft/ Pay order in favor of “Life Insurance Corporation of India” payable at Mumbai** and Earnest Money Deposit (EMD) as mentioned in e-Tender in a Physical Envelope accompanied by **Earnest Money Deposit of Rs. 75,900.00 (Rupees seventy Five Thousand and Nine Hundred only) In the form of Demand Draft/ Pay order /Bank Guarantee from any Scheduled commercial Bank only (i.e. Indian or Foreign Banks included in Second Schedule of Reserve Bank of India Act 1934 excluding Co-operative Banks or Regional Rural Banks) and not from Scheduled Co- Operative bank. The Bank Guarantee shall be as per the Performa given in the Bid Document.** In case the BG submitted by the Bidder is not genuine, the Bidder will be barred from participating in the tender of the Corporation for 2 years and the information will be shared with other Government Organizations including Banks & other financial institutions and to their previous/present employers etc.



- 4) **BIDs** will be received at the office of **Chief Engineer** at above address **on or before As per the Key Dates** and the e-Tenders will be opened at **as per the Key Dates** in the presence of contractors or accredited representatives, who wish to attend the online Tender Opening process.

The bidders can view the Tender Opening details through their respective Login IDs on the abovementioned e-Tender portal (Website). The Bidder should ensure that his Bid is received **Online**

Electronically on or before the due date and time as specified in “**Key Dates**” in the Tender Document and above mentioned Portal (website). **Please note that above e-Tendering System is an automatically time locked system which will be locked immediately as soon as due date and time is over and will not accept any offer after that. So, the Bidders are strictly advised to complete their process well before the due date and time to avoid any such instances as no such reasons shall be entertained.**

- 5) The guide lines to submit the tender on Electronic Tendering System is part of BID-I of the tender document. The Bidders are advised to carefully read the above document for understanding of e- Tendering System.
- 6) The Life Insurance Corporation of India does not bind itself to accept the lowest or any tender.

Encl: As above

CHIEF ENGINEER



LIFE INSURANCE CORPORATION OF INDIA
LETTER FROM BIDDER TO CHIEF ENGINEER

TO BE SUBMITTED ON OR BEFORE **As per the Key Dates**

Date:

To,

The CHIEF ENGINEER
LIC of India, Western Zonal Office,
Engineering Department,
1st Floor, West Wing, 'Yogakshema'
Jeevan Bima Marg,
Mumbai- 400021

SUB: E-TENDER FOR CIVIL & INTERIOR WORKS INCLUDING MODULAR FURNITURE, CHAIRS, ELECTRICAL INSTALLATION, DATA & TELEPHONE CABLING, FIRE ALARM SYSTEMS FOR PROPOSED MODERNIZATION OF BRANCH OFFICE 883 AND 904 AT GROUND FLOOR/MEZZANINE FLOOR OF ORIENTAL BUILDING, FORT MUMBAI, MAHARASHTRA.

Dear Sir,

- 1) Having examined the Enrolment Form, Selection Criteria , Technical Specifications, Scope of work, Detailed Drawings, Specifications, Conditions of Contract etc. included in the tender document for the percentage rate Contract relating to the above work, having visited/examined the site of the existing premises, having acquired the requisite information relating thereto as effecting the tender invited by you on behalf of the Life Insurance Corporation of India, I/We, the undersigned hereby offer to carry out the above mentioned work on percentage rate basis in strict accordance with the Contract Conditions and Specifications.

I/We, undertake to complete and deliver the whole of the works within a period as specified in Appendix to the Conditions of Contract from the date of issue of intimation from you that the tender has been accepted and upon receiving possession of the site. I/We shall be under the obligation to complete the entire work within the period of completion failing which to pay the sum as stated in the Appendix to the Conditions of Contract for every week that the works shall remain incomplete, damages as compensation subject to the conditions of contract relating to extension of time.

- 2) I/We enclose herewith my/our tender with an Earnest money remittance of

- a) **Tender Fee of Rs. 2,000/-+ 18% GST (non-refundable) in the form of Demand Draft/ Pay order in favour of "Life Insurance Corporation of India" payable at Mumbai**
- b) **Rs. 75,900.00 (Rupees Seventy Five Thousand and Nine Hundred only) in the form of Demand Draft/ Pay order /Bank Guarantee from any Scheduled commercial Bank only (i.e. Indian or Foreign Banks included in Second Schedule of Reserve Bank of India Act 1934 excluding Co-operative Banks or Regional Rural Banks) and not from Scheduled Co-Operative bank in the enclosed format**

I/We, hereby agree that part of this sum shall be forfeited by the 'Life Insurance Corporation of India' in the event of my/our tender being accepted and I/We fail to execute Contract when called upon to do so.



- 3) In the event of the tender being accepted, I/We, agree to furnish **5.0% of accepted tender amount**, in form one or two like amounts in the form of Bank Guarantee/s from **any Scheduled commercial Bank only (i.e. Indian or Foreign Banks included in Second Schedule of Reserve Bank of India Act 1934 excluding Co-operative Banks or Regional Rural Banks) and not from Scheduled Co- Operative bank** as per specimen given in Annexure "B" to Conditions of Contract, within 21 (Twenty One) days from the date of issuance of acceptance of tender or within 21 (Twenty One) days from the extended date as may be extended by the Chief Engineer.
- 4) I/We, note that the Earnest Money Deposit of **Rs. 75,900.00 (Rupees Seventy Five Thousand and Nine Hundred only)** would be refunded to me/us.
- a. On expiry of the validity of the tender or earlier at the discretion of Chief Engineer in case my/our tender is not accepted and
 - b. In case my/our tender is accepted, after I/We, furnish Bank Guarantees as mentioned above.
- 5) I/We, agree,
- a) In case my/our tender is withdrawn before expiry of the validity period or before the issue of letter of acceptance, whichever is earlier, or make any modifications in the terms and conditions of the tender which are not acceptable to the Department, in such case 25% of the EMD will be forfeited by the department.
 - b) In case my/our tender is accepted and the Performance Guarantee is not submitted within the prescribed period or approved extended period, 50% of the EMD will be forfeited automatically without any notice.

Yours faithfully,

(SIGNATURE OF THE CONTRACTOR)

Name and Seal

NAME OF THE PARTNER OF THE FIRM OR
NAME OF THE PERSON HAVING POWER OF
ATTORNEY TO SIGN THE CONTRACT
(CERTIFIED TRUE COPY OF THE POWER OF
ATTORNEY SHOULD BE ATTACHED

APPENDIX TO CONDITIONS OF CONTRACT

SUB: E-TENDER FOR CIVIL & INTERIOR WORKS INCLUDING MODULAR FURNITURE, CHAIRS, ELECTRICAL INSTALLATION, DATA & TELEPHONE CABLING, FIRE ALARM SYSTEMS AND AIR CONDITIONING FOR PROPOSED MODERNIZATION OF BRANCH OFFICE 883 AND 904 AT GROUND FLOOR/MEZZANINE FLOOR OF ORIENTAL BUILDING, FORT MUMBAI, MAHARASHTRA

ESTIMATED COST : Rs. 151.74 lakhs (Exclusive of GST)
PERIOD FOR COMPLETION : 03 Months
EARNEST MONEY DEPOSIT : Rs. 75,900.00

Sl. No.	Clause Nos.	Description	Remarks
1(a)	11	Minimum requirement of Technical staff	Diploma with minimum 2 years experience in Interior works
1(b)	11	Recovery for Non Deployment of Engineer/s at the Site	Rs 25000/- per month
2	13	Date of commencement	Either 21 (Twenty one) days from the date of acceptance letter issued to the contractor OR The day on which contractor is instructed to take possession of the site, whichever is earlier.
3	13 & 26	Date of completion	3 Months from the date of commencement
5	19.1	Compensation in the Form of Penalty	Compensation in the form of penalty for delay of the work: Quantum of compensation: @ 0.5% of the contract sum per week of delay to be computed on per day basis as mentioned in clause 19.1, not to exceed 10% of the tendered value of work.
6	21	Period of final measurement/assessment	60 (Sixty) days
7	22	Interim certificate	15 Days For interim certificate of payment, contractor shall complete work of minimum value of Rs. 50.00 Lakh.
8	22	Period of honouring interim certificate	20 (Twenty) days
9	22	Period of honouring final certificate	90 days from the date of submission of final measurements/assessment with details.
10	35	Security Deposit and	5.0% of the accepted tender amount as Security Deposit.

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CHIEF ENGINEER

11	35	Recovery of Security Deposit	EMD shall convert as SD and the balance amount recovered from RA/Final bill at 7.5% to the maximum of 5% of accepted Tender amount. -OR- In form of Bank Guarantee from Scheduled commercial Bank only (i.e. Indian or foreign banks included in second schedule of Reserve Bank of India Act 1934 excluding Co-operative banks or Regional Rural banks) and not from Scheduled Co-operative bank. The Contractor shall furnish one Bank Guarantee for full amount of Security deposit valid till end of defects liability period OR, Two Bank Guarantees of like amounts each equal to half the Security deposit; one valid till virtual completion and the other till end of defects liability period.
12	17.5	Contractor's All Risk Policy inclusive of Third Party Liability	Contractor All Risk Policy will be per clause 17.5 for full contract value with third party liability of 7.5% of the accepted contract value CAR policy shall cover the public liability for specified value or separate policy for CAR and Public liability.
13	17.6	Workmen's Compensation Policy	As per mutual agreement.
14	17.9 17.10 & 17.11	Recovery for non Extension of Insurance Policies (Workman's Compensation and Contractor's All Risk Policy inclusive of Third Party Liability)	Date for submitting the renewed Insurance policy if any will be 15 working days before the last date of the existing policy, failing which LIC may insure/ renew insurance and apply penal cost on the Contractor i.e. Premium Charges + Rs. 10,000/- as Admin Charges and Rs 25,000/- as penalty
15	27	Defects Liability Period	24 Months
16	22.6	No Claim Certificate	To be given on Contractor's letter head

Note: TAXES, DUTIES, LEVIES AND DEDUCTION AT SOURCE:

- The Contractors Quoted rates shall be exclusive of GST on Works Contract. The GST on Works Contract shall be reimbursed to the Contractor as per Notifications of Govt. Of India.
- Income Tax/ GST/ Labour Cess/BOCWW Cess shall be deducted at source at applicable rates as per notifications of Govt of India/ Govt of Maharashtra.
- Penalty on account of non renewal of Insurance, Compensation in the form of Penalty if imposed will attract GST if any at applicable rates during contract period.

**NO CLAIMS CERTIFICATE CUM RECEIPT**

Received Rs. _____ (Rupees _____) being the amount
against _____ my/our _____ final _____ bill _____ dated _____
for _____ (Name of Work) in full and final
settlement of bill.

Contractor
(Signature of Contractor on Revenue stamp)
Rubber stamp/seal of the contractor /company

CONFIRMATION OF EARNEST MONEY DEPOSIT

The authenticity of the Bank Guarantee submitted as EMD will be confirmed from the respective banks. In case the BG submitted by the contractor is not genuine the contractor will be barred from participating in the tender of the corporation for 2 years and the information will be shared with Govt. of India, Banks and other financial institutions, their previous/present employers etc.

REFUND OF EARNEST MONEY DEPOSIT

The EMD will be refunded to the unsuccessful bidders within 7 working days (excluding gazette holidays, Saturday, Sundays and any other holiday declared in NI act) of opening of the price bid. The EMD for the successful bidder will be refunded after the authenticity of the BG for Security Deposit and Performance Guarantee is confirmed.

FOREITURE OF EARNEST MONEY DEPOSIT

1) If the lowest tender withdraws his tender before the expiry of validity period or before the issue of letter of acceptance whichever is earlier or makes any modification in the terms and conditions of tender which are not acceptable to department, then the department shall, without prejudice to any other right or remedy be at liberty to forfeit 25% of the earnest money and to refund the balance.

2) If the contractor fails to furnish the prescribed performance guarantee within the prescribed period or duly approved extended period, 50% earnest money will be absolutely forfeited automatically without any notice and the balance 50% will be refunded.

APPENDIX TO GENERAL INSTRUCTION TO CONTRACTOR

Sl.NO	Clause Nos.	Description	Remarks
1.	12	Recovery of Electricity charges from Contractors bill if used from LIC source	0.25% of the Gross value of work done.
2.	13	Recovery of Water charges from Contractors bill if used from LIC source	0.25% of the Gross value of work done.

Site Address: Branch Office 883 and Branch office 904 in Oriental Building, Flora Fountain area, Opposite fountain / Telephone Exchange Bldg, Fort, Mumbai.

If there is any discrepancy in specification of items in schedule of quantities and in any other part of tender then the specification in the schedule of quantities

In terms of provision of section 33(4) of The insurance law (Amendment) ordinance 2014, Insurance Regulatory and Development Authority of India (IRDA), if it consider expedient to do so may direct any person hereinafter referred to as “Investigation officer” ,to make an investigation as specified under sec 33(1) or carry out an inspection as specified under section 33(2) of The insurance laws (Amendment) Ordinance 2014 who may examine on both; any Manager ,Managing Director or other Officer of the service provider or Contractor where the services are outsourced by LIC of India.

SPECIFICATION FOR CIVIL WORKS**1. WOOD WORK AND JOINERY****TIMBER**

- i. Unless otherwise specified all timber for frames and shutters for doors, windows, ventilators, cupboards etc., shall be first class, sound, well seasoned, C.P. Balarshah or other equivalent and approved teak and shall be free from knots, shakes, fissures, flaws, sun cracks and other defects. The planned surface shall be smoothened free from blemishes and discolourations. Timber shall be wrought, framed and cut to shape as shown on drawings and/or as directed.
- ii. All timber for carpentry and joinery in touch with masonry or concrete shall be coal tarred or creosoted before fixing. All rough frame work in partitions, suspended ceilings and veneering to walls etc., shall be treated with approved wood preservative 'Bison' or other equivalent and approved as per manufacturer's instructions and specifications. The rates quoted shall provide for such treatments.
- iii. All fully fabricated timber shall be air seasoned on site of work for a period of not less than two months to allow for any shrinkage that may take place. The preparations of timber for joinery is to commence simultaneously with the beginning of the project work generally and should proceed continuously until all the wood work is prepared and fixed/stacked on or near the site as the case may be. Generally wood shall be free from knots, however, wood with knots may be permitted provided individual hard and sound knot shall not be more than 40 mm in diameter and aggregate area of all the knots shall not exceed one half percent of the area of the piece.

Teak wood shall be approved incorporating in the work Contractor should ensure wood work does not warp or show other defects due to lack of proper seasoning.

HOLD FASTS :

Three hold-fasts shall be fixed to each post of the door frame and two to each post of the window frame. Unless otherwise mentioned in the item, the M.S. Hold-fasts shall be of the Size 300mm x 35 mm and 6 mm and shall be fixed to the frames by means of screws and not nails. The other end of the hold fast shall be fixed into jambs within 1:2:4 P.C.C if dimensions as directed.

Whenever asked for, rawl plugs or bolts as directed shall be used for rough grounds framing hangers etc. The rates quoted for wood work and joinery shall allow for all types of hold fasts as directed (Horns in frames shall be cut and shall not be used as hold fasts)

WORKMANSHIP AND CONSTRUCTION :

- i. The workmanship shall be first class and to the approval of the E.E. Scantling and boardings shall be accurately sawn and shall be of required width and thickness. All carpenter's work shall be wrought except where otherwise described. The workmanship and joinery shall be accurately set out in strict accordance with the drawings and shall be framed together and securely fixed in approved manner and with properly made joints. All work is to be properly tenoned, shouldered, wedged, pinned, bradded etc. and properly glued with approved quality glue to the satisfaction of the E.E.
- ii. **SCREWS :** All screws to be used in wood work and joinery shall be of brass and not iron.
- iii. **TOLERANCES :** 15mm (1/16") will be allowed for each wrought face of the sizes specified except where described as 'finished' in which case they shall hold to the full dimensions. For door/window frames tolerance shall be $\pm 2/3$ mm. in cross sectional dimensions and for shutters $\pm$ mm in thickness $\pm 2/3$ mm in width of styles and rails. For flush door shutters tolerance in width/height shall be ± 3 mm and on thickness $\pm$ mm.
- iv. **PROTECTION :** All wood work and joinery edges of timber frames etc., shall be protected from being damaged during construction by the Contractor.
- v. If it is decided by the Employer to provide antitermite treatment, the Building Contractor shall coordinate his work suitably as directed by the Executive Engineer.
- vi. Door/Window frames shall have cut rebates. Planted rebates shall not be permitted.

WOODEN FLUSH SHUTTERS (SOLID CORE TYPE)

- a. Solid core flush shutters shall be of commercial or Teak veneered type as specified in the item manufactured of approved quality. An approved sample shall be deposited in the office of the Corporation's Engineer on site for reference. The shutters will be provided with lipping. Finished thickness of the shutter shall be as mentioned in the item.

TEAK WOOD PANELLED SHUTTERS :

Solid wood panels for shutter shall be of pattern and size specified. Wherever possible each panel shall be in a single width piece. But where two pieces are used, width of each piece should not be less than 12.5 cm. In order to avoid warping, splitting and cracking, normally pieces not exceeding 20 cm. in width should be used. When made from more than one pieces. The pieces shall be jointed with a continuous tongued and grooved joint and glued together

and reinforced the longer dimension of the panel. Planes shall be framed in to grooves to the full depth of the groove leaving an air space of 1.6 mm and the faces shall be closely fitted to the sides of the groove. Mouldings to the edges of panel openings shall be scribed at the joints.

FIXTURES AND FASTENINGS :

Unless otherwise specified in the Schedule of Quantities each shutter shall be hung with three iron butt/parliamentary hinges of approved quality size and make with iron screws the things and screws bolt should be copper Oxide coated and the Contractors rate shall cover for providing and fixing hinges to the shutters. Unless otherwise specified in the Schedule of Quantities other fittings, if ordered, shall be paid separately as prime cost items.

FINISHING :

The wood work shall be finished by 3 coat of painting. French polishing or wax polishing as specified in the item.

RATE TO INCLUDE :

Apart from other factors mentioned elsewhere in this Contract, the rate for item of wood work and joinery shall include for the following :-

- i. All labour, materials and equipments for carrying out the work.
- ii. Providing and fixing frames and shutters, fastening and fixtures including embedding in the floor about 40/50 mm deep and labour for fixing hardware fittings, supplied by L.I.C.I. or purchased under prime cost items.
- iii. Bison or other equivalent wood preservative treatment to rough frame work in partitions, suspended frame work in ceilings and timber veneering to walls etc.
- iv. Coal tarring / creosoting of embedded parts of woodwork in masonry and concrete.
- v. Unless otherwise specified, sheet glass (plain or frosted) for shutters of doors/windows/fanlight, as manufactured by M/s Hindustan Pilkington or other equal and approved.
- vi. T.W. beadings/T.W. planted beads for fixing panels of shutters of doors, wherever required to be provided.
- vii. Providing T.W. cover mould of approved size.
- viii. 3 coats of 1st quality synthetic Enamel paint of approved colour and shade including primer, or 3 coats of French or wax polishing to approval as specified in the item.

MODE OF MEASUREMENT :

Timber Doors/Windows shall be measured in Square Meter (Sqm). over door, window frames unless otherwise specified in specifications.

PLYWOOD

Plywood/medium density fibreboard/blockboard/teak particleboard/veneered board, etc., as specified in the approval list of manufacturers shall only be used.

Only B.W.R. grade phenol formaldehyde bonded hot pressed plywood generally confirming to I.S.I. 303 of approved make shall only be used.

Marine plywood shall generally confirm to I.S. 710-1980 and also to Defence/Navys specification, bonded with phenol formaldehyde treated with Wood preservative.

Only teak wood particle board shall be used, particle board shall be phenol formaldehyde and generally confirm to I.S. 3087-1965.

Only 3mm to 4mm thick straight grained group matching approved veneers shall be used. Only veneers laminated from species like teak, maple white cedar, rosewood, white cedar, walnut, mahogany shall be considered for approval and use.

Blockboard shall be equal or superior quality to that laid down in B.S. 3444 with one of the following I.S. Specifications or such approved adhesives;

I.S.I. 851-1957: Synthetic resin adhesive for construction works in wood.

I.S.I. 849-1957: Cold setting case in glue for wood.

Blockboard shall be generally conforming to I.S.I. 1659-1960 or as per approved sample.

2. CERAMIC AND GLAZED TILES IN FLOORING AND DADO**TILES**

Ceramic glazed tiles including specials shall be of approved make and quality and shall conform to IS-777-1961 in all respects. Samples of tiles shall be got approved by the Chief Engineer, who will keep them in his office for verification as to whether the materials brought for use conform to the approved samples. White glazed tiles shall be of the size 152x152x 5 mm.

MORTAR BEDDING :

Cement mortar for bedding shall be prepared as per standard practice. The amount of water added shall be minimum necessary to give just sufficient plasticity for laying and satisfactory bedding. Care shall be taken in preparing the mortar to ensure that there are no hard lumps that would interfere with the even bedding of the tiles. Before spreading mortar, sub-floor or base shall be cleaned of all dirt, scum, loose materials and laitance if any, by scrubbing with

coir or steel wire brush or by hacking if necessary and then well wetted without forming any pools of water on the surface. Before laying, the mortar, the sub-grade shall be got approved by the Executive Engineer in case of R.C.C. floors, the top shall be left a little rough. All points of level for the finished paving surface shall be marked out. The mortar shall then be evenly and smoothly spread over the base by the use of screed battens only over so much area as will be covered with tiles before the setting of the mortar.

LAYING, FINISHING, CURING AND CLEANING :

The tiles before laying shall be soaked in water for at least 2 hours. Tiles which are fixed in the floor adjoining the wall shall be so arranged that the surface of the round edge tiles shall correspond to the skirting or dado. Neat cement grout of honey like consistency shall be spread over the bedding mortar just to cover so much area as can be tiles within half an hour. The edges of the tiles shall be smeared with neat white cement slurry and fixed in this grout one after the other, each tile being well pressed and gently tapped with a wooden mallet till it is properly bedded and in level with the adjoining tiles. There shall be no hollows in bed of joints. The joints shall be kept as close as possible and in straight lines. The joints between the tiles shall not exceed 1.5mm wide. After fixing the tiles finally in an even plane, the flooring shall be covered with wet saw dust. The tile flooring shall be cured for 14 days.

After the tiles have been laid in a room or the day's fixing work is completed the surplus cement grout that may have come out of the joints shall be cleaned off before it sets. Once the floor has set, the floor shall be covered with oil free dry saw dust which shall be removed only after completion of the construction work and just before the floor is occupied.

RATES TO INCLUDE :

Apart from other factors mentioned elsewhere in this contract, the Contractor's rate quoted include for the following :-

- i. Cleaning the base and providing and laying bedding mortar and levelling.
- ii. Providing and fixing the tiles including all specials like round edges corner cups, angles etc. in neat cement float over the bedding mortar.
- iii. Filling the joints of tiles with neat white cement slurry.
- iv. finishing, curing and cleaning.
- v. All labour, materials and use of tools for carrying out the items as specified above.

MODE OF MEASUREMENT :

Measurement for flooring tiles shall be in square metres as provided.

3. **WHITE WASHING, COLOUR WASHING AND DISTEMPERING**

WHITE WASHING :

A. MATERIALS :

White wash shall be prepared from fresh burnt fat lime. The lime shall be dissolved in a tub with sufficient quantity of water (about 4/5 litres/kg. of lime) and the whole thoroughly mixed and stirred until it attains the consistency cream. The wash shall be taken out in small quantities and strained through a clean coarse cloth. Clean gum dissolved in hot water shall then be added in suitable proportion of two grams of gum arabic to a litre of lime to prevent the white wash coming off easily when rubbed. Rice seize may also be used instead of gum., gum Regd. Neel colour added for whiteness.

B. SCAFFOLDING :

This shall be double or single according to requirements and as directed. If ladders are used pieces of old gunny bags or cloth bags shall be tied on their tops to avoid damage or scratches to the plastered surfaces, etc. proper stage scaffolding shall be erected when white washing the ceiling

C. PREPARATION OF SURFACE :

The surface shall be prepared by removing all mortar droppings and foreign matter other means as may be ordered by the corporation's Engineers to produce an approved clean and an even surface. All loose pieces and scales shall be scraped off and holes, cracks etc. stopped with mortar to match with the surrounding finish. In case where the surfaces have been previously white washed or colour washed, the old white or colour wash shall be entirely removed and surfaces broomed down before the new white wash is applied. In case the old white wash cannot be removed by brooming, the surfaces shall be cleaned by scraping.

D. APPLICATION OF WHITE WASH :

On the surface so prepared, the white wash shall be laid on with a brush. The first stroke of the brush shall be from top downwards, another from bottom upwards over the first stroke and similarly one stroke from the right and another from the left over the first brush before it dries. This will form one coat. each coat must be allowed dry and shall be subject to inspection and approval before the next coat is applied. When dry, the surface shall show no signs of cracking. It shall present a smooth and uniform finish free from brush marks and it should not come off easily when rubbed with a finger. Minimum 3 coats of white wash shall be applied.

No portions in the surface shall be left out initially to be patched up later on.

For old work, patches and repairs shall be white washed first. Thereafter, the whole surface shall be white washed with the required number of coats.

For new work, the white washed surface shall present a smooth and uniform finish. Doors, windows, floors and other articles of furniture, etc shall be protected from being splashed upon. Splashing, droppings, if any, shall be removed and the surfaces cleaned.

E. RATES TO INCLUDE :

Apart from other factors mentioned elsewhere in this contract, the rates for white wash shall include for the following.

- i. All labour material, equipment required for white washing.
- ii. the surface for white wash including the scaffolding. Scaffolding including erection and removal.
- iii. Providing and preparing the white wash.
- iv. Preparing
- v. Applying the white wash in three coats minimum. If a proper even surface is not obtained to the satisfaction of the Executive Engineer in 3 coats, contractor shall carry out additional coats of white wash to approval at Contractor's expenses.

F. MODE OF MEASUREMENT :

The measurement shall be in square metre. The mode of measurement shall be as applicable to that for plaster.

COLOUR WASH :

MATERIAL :

This shall be prepared by adding approved colouring matter to the white wash (prepared for white washing) according to that required.

In all other respects the same conditions and specification as applicable to white wash shall also be applicable to colour wash.

DISTEMPERING :

POWDERED/DRY DISTEMPER :

- a. **MATERIAL** : The powdered/dry distemper shall be of approved colour and shade manufactured by M/s Blundel Eomite or other equivalent and approved.
- b. **SCAFFOLDING** : This shall be double or single as required and directed.
- c. **PREPARING THE SURFACE** : The surface to be distempered shall be cleaned and all cracks, holes and surface defects shall be repaired with gypsum and allowed to set hard. All irregularities shall be sand prepared smooth and wiped clean. The surface so prepared must be completely dry and free from dust before distempering is commenced. In the case for walls newly plastered, special care shall be taken to see that it is completely dry before any treatment

is attempted. For the old surface which had earlier been distempered, the surface shall be cleaned of grease dust etc. the flaking of previous coatings, if any, shall be taken off. all cracks, holes, and surface defects shall be repaired with gypsum and allowed to set hard and then sand prepared smooth and wiped clean. But in case the surfaces are coloured or white washed, the wash must be removed thoroughly first.

- d. **PRIMING COAT**: The priming coat shall be applied over the completely dry surface in the manner recommended by the makers in the case of patent distempers. When no priming coat is specified by the manufacturer a finely powdered chalk mixed with a thin solution of glue shall be applied to prepare a good, hard background the coating when dry being sand prepared as clean and smooth as possible.
- e. **APPLICATION OF DISTEMPER** : The instructions of the makers shall be followed regarding the preparation of the surface and application of priming and finishing coats. Distemper shall not be mixed in a larger quantity than is actually required for a day's work. Hot water should be used to prepare the mixture. Distempers shall be applied in dry weather with a broad stiff brush in long parallel strokes. The treated surface shall be allowed to dry and harden. Second or succeeding coats shall not be applied until the proceeding coat has been passed by the Executive Engineer. Two more coats of distemper shall be given in exactly the same manner as the first one but only after the earlier coat laid has thoroughly dried.
- f. **RATED INCLUDES** : The rate shall include all labour, materials, equipment and tools for carrying out the following operations :
- i. Providing the primer and distemper and mixing the distemper.
 - ii. Scaffolding.
 - iii. Preparing the surface to receive the priming and finishing coats.
 - iv. Applying the priming coat.
 - v. Applying the distemper in 3 coats minimum. If a proper even surface is not obtained to the satisfaction of the Executive Engineer in 3 coats, Contractor shall carry out additional coats of distemper to approval at contractor's expense.
- g. **MODE OF MEASUREMENT** : Similar to that for white washing.

OIL BOUND DISTEMPER :

The specification and conditions for this shall be the same as that applicable for dry distemper above except that oil bound distemper or approved make, shade and colour shall be used after applying priming coat of petrifying liquid or other primer as may be recommended by the manufacturers of distemper or as directed.

4. PLASTIC EMULSION PAINT :**MATERIAL :**

The emulsion paint and primers in general shall be of approved quality colour and shade as manufactured by M/s Goodlass Nerolac or other equal and approved.

SCAFFOLDING :

This shall be double or single as required and directed. If ladder are used, pieces of old gunnybags or cloth rags shall be tied on their tops to avoid damage of scratches to the plaster surfaces and flooring , etc. Proper stage scaffolding shall be erected when painting the ceiling.

PREPARATION OF THE SURFACE :**a. New surface :**

The surface to be painted shall be cleaned and all cracks, holes and surface defects shall be repaired with plaster of paris for spot filling and with filler prepared with whiting, water and little quantity of paint for filling and levelling the wider areas.

PRIMING COAT :

The priming coat of the approved shade shall be applied over the completely dry surface in the manner as recommended by the paint manufacturers. The emulsion paint, in the priming coat, may be thinned down with 20% water or as recommended by the paint manufacturer. Turpentine or any other solvent shall not be used for thinning the paint.

APPLICATION OF EMULSION PAINT :

The recommendation of approved paint manufacturers, whose product is used shall be followed regarding the preparation of the surface and the application of the priming and finishing coats. The contractor shall arrange for technical assistance and supervision from the paint manufacturer, during the execution of the painting work. After the priming coat has been applied and is perfectly dried all holes scratches if any, shall be repaired as mentioned in "preparation of surface" and then the second coat of approved shade and manufacture shall be evenly applied and allowed to dry. The third coat shall be carefully applied to achieve smooth and even surface after the previous coat has dried up. Minimum 3 coats of paint shall be applied inclusive of primer coat. If a proper and even surface is not obtained to the satisfaction of the Executive Engineer in 3 coats, contractor shall carry out additional coats of painting to approval, at contractor's expense. Care shall be taken that dust or other foreign materials do not settle or disfigure the various coats.

RATES TO INCLUDE :

Apart from other factors mentioned elsewhere in this contract, the rate for the item of plastic emulsion paint shall include for the following :

- i. All labour, materials and equipment necessary to carry out the work.
- ii. Supplying the approved emulsion paint for priming and finishing coats.
- iii. Preparing the surfaces for receiving the primer and finishing coats.
- iv. Scaffolding including its erection and dismantling.
- v. Application of one primer coat and minimum two coats of finishing. If a proper and even surface is not obtained to the satisfaction of the Executive Engineer, in 3 coats, contractor shall carry out additional coats of painting to approval at Contractor's expense.
- vi. Protection to painted surface till dried and handed over.
- vii. Expenses, if any, for supervision and technical assistance supplied by the approved paint manufacturer.

MODE OF MEASUREMENT :

The measurement shall be in square metre. The mode of measurement shall be as applicable to that for white washing.

5. PAINTING FRENCH POLISHING. WAX POLISHING :**POLISHING :****MATERIAL :**

Ready mixed oil paints and primers, in general shall be of approved quality, colour and of approved manufacturer. These materials shall be in sealed tins and shall be opened in the presence of the Corporation's Engineer on site.

PREPARATION OF SURFACE :

- a. **IRON AND STEEL WORK** : Surface to be painted shall be thoroughly cleaned and papered and/or rubbed with Emery cloth, if necessary, to remove grease, mortar or anything foreign material. In case of rusted surface, it shall be first cleaned with wire brush till the corroded rust is removed. The prepared surface shall be shiny and free from brush marks, patches, blisters and other irregularities. The surface thus finished shall be got approved for painting.
- b. **WOOD WORK** : All surfaces to be painted shall be thoroughly cleaned, sand papered and removed of all foreign materials. In case of surfaces having knot and nail holes, these shall be filled with knotting and stopping materials. The knotting material shall consist of pure shellac dissolved in methylated spirit. Stopping materials, shall consist of putty. The surfaces thus treated shall be allowed to dry and then sand papered smooth.

APPLICATION :

After preparing the surface a primer coat shall be applied. The primer coat should be ready mixed of approved make and manufacturer. After the primer coat is applied and perfectly dried, all holes, cracks etc, if still remaining, shall be filled in with putty and the surfaces sand papered smooth. Then a second coat of paint of approved shade and manufacture shall be evenly applied and allowed to dry. The third coat shall be

carefully applied to achieve smooth and even surface after the previous coat has dried up. Minimum 3 coats of paint shall be applied to inclusive of a primer coat. If a proper and even surface is not obtained to the satisfaction of the Executive Engineer in 3 coats, Contractor shall carry out additional coats of painting to approval, at Contractor's expense. Care shall be taken that dust or other foreign material do not settle or otherwise disfigure the various coats.

RATES TO INCLUDE :

Apart from other factors mentioned elsewhere in this contract, the rate for the item of paintings shall include for the following :

- i. All labour, materials, and equipment necessary to carry out the work.
- ii. Supplying the approved paint for priming and finishing coats.
- iii. Preparing the surfaces including knotting and stopping for receiving the primer and finishing coats.
- iv. Scaffolding including its erection and dismantling.
- v. Application of one primer, coat and two coats of finishing minimum. If a proper and even surface is not obtained to the satisfaction of the Executive Engineer in 3 coats.

Contractor shall carry out additional coats of painting to approval at Contractor's expense.

- vi. Protection to painted surface till dried and handed over. Mode of measurement :

Normally painting to wood work and steel shall be included in the concerned items of work and shall not be measured separately. If painting is to be measured separately the same will be as per I.S.:1200-1964. part –15

FRENCH POLISHING :

French polish to be used shall comply with I.S. 348-1952 in the requirements of quality and methods of test. Before French polish is applied, the surface of wood work shall be prepared in the same manner as for painting. The wood to be polished should be first painted with a filler composed of 1 part of whiting mixed with 0.53 part of methylated spirit. After drying, it should be finely sand papered. On the wood work thus treated a thin coat of French polish shall be applied and allowed to dry. After drying the surface shall be lightly rubbed with a lime sand paper prior to the second and third coat. The surface shall show an even polished surface and be approved by the Executive Engineer (Corporation's Engineer).

RATES TO INCLUDE : Similar to that of painting.

MODE OF MEASUREMENT : Similar to that of painting.

WAX POLISHING :

- a. The polish shall be of approved manufacture (e.g., Mansion Brand) or shall be prepared as under :
- b. A mixture of Bee's wax and turpentine in proportion of 2:1 by weight shall be used. The wax is melted and added to the turpentine, mixed well and allowed to cool.
- c. The surface of wood work shall be prepared as for oil painting before mixing. The wood work shall be measured with the mixture and allowed to remain overnight so that the mixture may soak into the pores of the wood. In the morning the superfluous wax shall be wiped off and the surface rubbed up with a soft flannel to a fine polish.

RATES TO INCLUDE : Similar to that of painting.

MODE OF MEASUREMENT : Similar to that of painting.

6. ALUMINUM DOORS, WINDOWS, VENTILATORS AND PARTITION WALLS

All ALUMINUM work shall be free from defects impairing strength, appearance and shall be of the best available quality for the purpose specified. The ALUMINUM alloy used in the manufacture of extruded door/window/ventilator sections shall correspond to IS designations HE9-WP of IS:733-1956. "Specifications for wrought ALUMINUM and ALUMINUM alloys bars, rods and section (for general engineering purpose)" Hollow ALUMINUM alloy section and coupling section used shall confirm to ISS generation HV9W9 of IS 1285-1958. "Specifications for wrought ALUMINUM and wrought ALUMINUM and ALUMINUM alloys extruded round tube and hollow section (for general engineering purpose only)"

Contractors shall commence manufacturing of doors/ windows/ventilators only after the shop drawings showing full size, sections, thickness of metal, details of construction, hardware etc., submitted by them are approved. Where ALUMINUM comes in contact with concrete, brick work, plaster or any other dissimilar metals, it shall be coated with a coat of Zinc chromate conforming to IS:104-1950. Contractor shall cover all the anodised finish work with a thick layer of clear transparent lacquer based on methacrylates or cellulose butyrate to protect the surface from wet cement during installations. This lacquer coating shall be removed after the completion.

All the manufactured doors, windows and ventilators shall be stacked on site under cover. Damaged surfaces with defects like scratches etc., on finished work shall not be accepted. Fabricated materials shall be created in an approved manner to protect the material against any damage during transportation. Loading and unloading shall be carried out with utmost care. The doors, windows and ventilators on arrival at site shall be carefully examined to detect any damage pieces.

Arrangements shall be made for expeditious replacement of damaged pieces/parts. Materials found to be acceptable on inspection only shall be used. All exposed surfaces of section for ALUMINUM doors/windows/ventilators including beading and other accessories shall be anodised after fabrication, in a manner confirming to IS:1868-1968 and to approve finish. Anodic coating/ powder coating shall be mentioned in schedule of quantities under relevant items.

ALUMINUM DOORS, WINDOWS AND VENTILATORS:

ALUMINUM doors, windows and ventilators shall be manufactured from sturdy extruded sections of approved manufacture and shall be of ALUMINUM alloys as stated above. Contractor shall provide sturdy sections/members of the doors, windows and ventilators including combination of joints so as to withstand wind load of high intensity. The frame shall be square and corners of the frames being fabricated to true right angles. Both the fixed and opening frame shall be of sections which have been cut to length, mitred and technically jointed and or electrically welded at corners as required for satisfactory performance. Sub-dividing bars shall be tenoned and riveted into the frames. All members shall be accurately machine milled and fitted to form hairline joints. The jointing accessories such as cleats, brackets etc., shall be of such material as not to cause any bi-metallic action. All the sizes indicated in the tender as well as in the drawings for various windows, ventilators, doors etc., are to be considered as structural openings at work site. These opening sizes are to be physically measured and verified at the site by the Contractor before taking up the actual manufacture of various units.

METHOD OF FIXING

- a) ALUMINUM doors, Windows and Ventilators in Brick Work and Concrete Work: ALUMINUM Windows, doors and ventilators shall be fixed to brick work by means of slotted steel adjustable lugs (natural finish), not less than 100mmx16mmx3mm with counter sunk galvanised machine screws and nuts 19x6.3mm and to concrete works by means of 45mmxNO10 galvanised wood screws.
- b) Fixing of Screws and Lugs: Outer frame shall be provided with fixing holes centrally in the web of the section at approved intervals any steel lugs coming in contact with ALUMINUM should be either galvanised or give one coat of bituminous paint. After fixing the frame in position and stated above the space between the concrete surface and the frame of doors/windows/ventilators shall be freshly grouted with cement mortar 1:4 so as to achieve absolute water tightness between the frame and the inside surface.

Further all the vertical and horizontal members of doors, windows and ventilators etc., shall be provided with Neoprene weather stripping. The Contractor shall design fabricate and fix in position the doors, windows and ventilators in such a way that the water penetration is totally and effectively sealed and any dampness on the inner surfaces is completely eliminated. Further, to drain out any water falling on the members of the frame, a continuous drip strip and necessary weep holes shall be provided. The shop drawing submitted by the contractor shall show method of sealing water penetration also.

The method of fixing the doors, windows and ventilators in position stated above shall generally be adopted by the Contractors and the members used in the manufacturing of units shall be so designed to suit the above method of fixing. However, the contractors are free to adopt any other equivalent method of fixing ALUMINUM doors, windows and ventilators, if the same is approved by Chief Engineer. The rate quoted shall include for the approved method of fixing. In no case door/windows and ventilators shall be allowed to be fixed over wooden runners. The doors, windows and ventilators should be designed not only for its strength, stability, stiffness against all odds, but for easy operation, water tightness easy replacement of glass and cleaning from inside. All screws used shall be of adequate size and shall be cadmium plated brass.

GLASS AND GLAZING

Glass shall be of the type and quality specified in the schedule of quantities and as manufactured by approved manufacturer.

Before installation of the glass, contractor shall ensure the following:

- a) All Glazing rebates shall be square, plumb, true in plane, clear, dry and free of dust.
- b) Glass edges shall be clear and cut to exact size, glass with chipped or damaged edges shall be rejected.
- c) Glass shall be set in glazing clips and so installed to achieve proper water tightness.
- d) Suitable PVC or Neoprene gaskets shall be used for fixing glass so as to prevent rattling.
- e) BEADING: Beading shall be of ALUMINUM section and shall be snap on type having mitred corners either triangular or rectangular.
- f) Any hollow portion between the frame and the brick/concrete surfaces and the component parts of the frame shall be filled up with suitable mastic/cement and sand fillet as per I.S Specifications and rates quoted shall include for the same.
- g) On completion of the job, all glasses shall be thoroughly cleaned and free from dirt, putty or other adhering material.
- h) Wastage in cutting of glass, shall be to contractor's account, Frosted/ground glass shall be set with smooth surface outside.

Contractors shall submit the detailed drawing showing the various members of ALUMINUM doors, windows and ventilators which they propose to use, along with their filled in tender.

The members proposed to be provided by the Contractors for ALUMINUM doors, windows, ventilators shall be of approved quality and sturdy to withstand the wind pressure of high intensity and day to day handling and shall be free from rattling, leakage etc.. If required, Contractor shall furnish the detailed design calculations to substantiate the sturdiness of each door, window and ventilator. In case, any modifications in sizes, thickness and weight are required to any members of doors windows and ventilators, same shall be carried out by the Contractor and suitable adjustment shall be made on the basis of relevant tender items.

The Chief Engineer reserves the right to delete any or all items of this trade and allot the Work under this head to any specialised agency/agencies. No claim whatsoever shall be entertained on this account.

MODE OF MEASUREMENTS: ALUMINUM doors, windows and ventilators shall be measured in sq.mts. Clear area over one face inclusive of external frame shall be measured. Any fixture or projections embedded in Concrete/masonry work shall not be measured. Rate shall include for fittings and fixtures shown on the shop drawings approved by the Chief engineer

HARDWARE: Rate for ALUMINUM doors, windows and ventilators shall include for supplying and fixing hardware. Hardware shall be of best quality extruded section and shall be of ALUMINUM. Hinges shall be of heavy pattern with stainless steel pins and stainless steel washers. Contractor's rates shall include rates for necessary screws, bolts and other devices for a neat and secure hardware arrangement. The bolts and screws etc., shall be of cadmium plated brass of required size to secure and permanently fix the hardware in place. No steel or iron screws shall be used. Samples of different items of hardware including screws shall be submitted along with the sample of doors/windows/ventilators for approval. Contractors shall be responsible for the proper working of all hardware for a period of one year from the date of virtual completion.

RATE TO INCLUDE: Apart from other factors maintained elsewhere in this tender document, rates for the items of supplying and fixing ALUMINUM doors, windows and ventilators shall also include for the following:

- a) All materials and labour required for supplying and fixing in position approved anodized ALUMINUM doors, windows and ventilators as described in the trade at site work.
- b) After the shop drawing are approved, the contractor shall apply one sample each of door, window and ventilator with hardware etc.. for approval as directed.
- c) Supply and fixing in position glass of specified thickness, type and quality along with putty, glazing clips and ALUMINUM beadings of required section.
- d) All accessories, for fixing doors, windows and ventilators to concrete/masonry surface as described in the trade.
- e) Filling sealants as per details to ensure water tightness. All the sealants must be permanently resilient and of non- bleeding nature.
- f) Protecting the surface and edges around doors, windows and ventilators from any damage while fixing doors, windows and ventilators.
- g) Removing all protective coverings and cleaning the door, window and ventilator frames.
- h) Neoprene/PVC weathering strips required.
- i) Drip strip to drain out water falling on the members of the frame.
- j) Pressure grouting in Cement mortar 1:4 the space between the concrete surface and frame of window and ventilators.
- k) PVC or rubber gaskets for fixing glass.
- l) Cadmium plated brass screws wherever required.
- m) Galvanised/ALUMINUM channels pieces, coach screws, rawl plugs etc. of required size and member for fixing door, window and ventilator frames in position.
- n) Necessary scaffolding/cradle for erection of ALUMINUM doors, windows and ventilators in position.

- o) Rates for sliding windows and ventilators to include for adequate arrangements for draining out water collected in the channel of the water frame.
- p) All rates quoted in the trade shall include for supplying and fixing.
- q) Swing door shutters shall include for double action oil check floor springs of approved make and size including embedding the floor springs in the flooring and making good the same.
- r) For all window and ventilator openings, contractor shall prepare MS retrievable template frames with necessary tolerance for obtaining the correct dimensions of openings in concrete/brick masonry works.
- s) ALUMINUM hardware, all necessary fixtures and accessories.
- t) Suitable metallic clamps at every joint of the outer frame.

OVERALL SIZES OF ALUMINUM DOORS, WINDOWS AND VENTILATORS:

Size of doors, windows and ventilators in the tender shall be considered as approximate. These sizes are likely to reduce by about 40mm to 50mm due to T.W surrounds to be provided in the opening. Contractor shall therefore, verify all sizes at site before manufacturing. Payment shall be based on the actual size provided.

SIZES OF ALUMINUM SECTIONS AND WEIGHTS OF EACH UNIT: Contractor shall note that sizes and minimum weights of each unit of doors, windows and ventilators have been given LIC in relevant tender items. These shall be considered as overall guidelines for arriving at the proposed actual unit weight of each door/window/ventilator and also to help contractors for choosing the various sections for the different members of each unit of doors, windows and ventilators. Contractor shall however, submit his own design and drawings giving details of sizes and weights of all sections for each type of door, window and ventilator etc., as also actual weight per unit as proposed by them.

Contractors are particularly requested to ensure that their design is as economical as possible consistent with performance requirements as stated in the tender.

VARIATION OF WEIGHTS: Minimum weight of each unit of ALUMINUM doors, windows and ventilators is given by LIC in relevant tender items. Contractor shall quote his rates for doors, windows and ventilators whose actual weight per unit as proposed by them shall be with plus or minus 5% of minimum weight of each unit as specified by LIC in relevant tender items.

In case of variation in the weight per unit (exclusive of glass, hardware and fittings but inclusive of beading if any) as per finally approved shop drawings beyond the variation limit of plus or minus 5% from the contractor's actual weight per unit submitted at the time of shop drawings, suitable adjustment shall be made on the basis of relevant items provided in the bill of quantities for this purpose (based on rate per kg of ALUMINUM inclusive of anodizing/powder coating etc.)

SIDE HUNG AND TOP HUNG WINDOWS/VENTILATORS: The ALUMINUM hinges for side hung and top hung windows/ventilators shall be fabricated out of extruded sections conforming to IS designations HE10WP or HE30WP of IS:733-1956. Specifications for wrought ALUMINUM and ALUMINUM alloys, bars, rods and sections (for general engineering purposes)

CENTRE-HUNG VENTILATORS: Centre-hung ventilators shall be hung on two pairs of cup pivots of ALUMINUM alloy to IS Designation NS-4 of IS:737-1955 specification for wrought ALUMINUM alloys, sheet and strip (for general engineering purpose) and riveted to the inner and outer frames of the ventilator to permit the ventilator to swing to an angle of approximately 85 degrees. The opening portion of the ventilator shall be so balanced that it remains open at any desired angle under normal weather condition.

SPECIFICATION FOR ELECTRICAL INSTALLATION, FIRE ALARM AND DETECTION SYSTEM, AND AIR CONDITIONING DATA CABLING SUBJECT TO THE GENERAL CONDITIONS OF CONTRACT IN FORCE

All electrical work shall be carried out through experienced agency who has valid electrical contractor license. Contractor has to apply for the approval from LIC of India to engaging agency for Electrical installation work. The consent letter from Electrical agency for carrying out the above work, copy of Electrical license and experience certificates (if required) is to be submitted along with above application before commencement of work.

TECHNICAL DETAILS & SPECIFICATIONS

(1) The electric power will be received and distributed in a building, through following means:-

- (i) Cabling and switchgear to receive power.
The building is divided into convenient number of parts, each part served by arising main system to distribute power vertically/horizontally.
- (ii). Power flows from rising main through tap-off box to floor main board to final DBs and then to wiring.
- (iii) Dedicated circuit for different loads such as lighting, HVAC, power plug loads shall be provided, wherever possible.
- (iv) Rising main, which takes care of general lighting and power outlet load of the building, should have independent cables for lighting as well as power, wherever possible. Other loads like lifts, water pump sets, other motor loads are fed by independent cables of suitable capacity fed from properly designed essential/ non-essential LT power panels with suitably designed switchgear having necessary control and safety features.
- (v) Therefore the distribution/wiring system essentially consists of provision of cables, switchgear, rising main, bus-ducting, earthing, laying of pipes/ conduits etc. (in surface or recess) based on proper detailed designing to decide on various sizes/ capacities of these components and various controls and safeties involved, to provide an efficient, reliable, safe and adequate electrical distribution and wiring system.

2. System of Distribution and Wiring

- (i) The wiring shall be done from a distribution system through main and/or branch distribution boards. The system design and location of boards will be properly worked out.
- (ii) Each main distribution board and branch distribution board shall be controlled by an incoming circuit breaker. Each outgoing circuit shall be controlled by a circuit breaker.

- (iii.) DBs shall be separate for light and power.
- (iv) Only MCCB/MCB/ type DBs shall be used. Rewirable type fuses shall not be used.
- (v) Deleted.
- (vi) Power' wiring shall be kept separate and distinct from light wiring, from the level of circuits, i.e., beyond the branch distribution boards. Conduits for light/power wiring shall be separate.
- (vii).Essential/non-essential/UPS distribution each will have a completely independent and separate distribution system starting from the main, switchboard up to final wiring for each system. As for example, conduit carrying non-essential wiring shall not have essential or UPS wiring. Wiring for essential and UPS supply will have their own conduit system. No mixing of wiring is allowed.
- (viii) Generally, no switchboard will have more than one source of incoming supply. More than one incoming supply will be allowed only at main board with proper safety and interlocking so that only one source can be switched on at a time.
- (ix) Each MDB/DB/Switch Board will have reasonable spare outgoing ways for future expansion.
- (x) Balancing of 3-phase circuit shall be done

3. Wiring

Submain and Circuit Wiring

- (a) Submain Wiring : Submain wiring shall mean the wiring from one main/distribution switchboard to another.
- (b) Circuit Wiring : Circuit wiring shall mean the wiring from the distribution board to the 1st tapping point inside the switch box, from where point wiring starts.

Deleted.

Measurement of other Wiring Work

Other types of wiring shall be measured separately on linear basis along the run of wiring depending on the actual number and sizes of wires run.

Point Wiring

Definitions

A point (other than socket outlet point) shall include all work necessary in complete wiring to the following outlets from the controlling switch or MCB.

- (a) Ceiling rose or connector (in the case of points for ceiling/exhaust fan points, prewired light fittings, and call bells).
- (b) Ceiling rose (in case of pendants except stiff pendants).
- (c) Back plate (in the case of stiff pendants).
- (d) Lamp holder (in the case of goose neck type wall brackets, batten holders and fittings which are not prewired).

Scope

Following shall be deemed to be included in point wiring:

- (a) Conduit/channel as the case may be, accessories for the same and wiring cable between the switch box and the point outlet, loop protective earthing of each fan/ light fixture.
 - (b) All fixing accessories such as clips, screws, Phil plug, rawl plug etc. as required.
 - (c) Metal or PVC switch boxes for control switches, regulators, sockets etc, recessed or surface type, and phenolic laminated sheet covers over the same.
 - (d) Outlet boxes, junction boxes, pull-through boxes etc. but excluding metal boxes if any, provided with switchboards for loose wires/conduit terminations.
 - (e) Control switch or MCB, as specified.
 - (f) 3 pin or 6 pin socket, ceiling rose or connector as required. (2 pin and 5pin socket outlet shall not be permitted.)
 - (g) Connections to ceiling rose, connector, socket outlet, lamp holder, switch etc.
 - (h) Bushed conduit or porcelain tubing where wiring cables pass through wall etc.
- (Note: In areas where false ceiling are provided, termination of wires should be at the fittings. Flexible conduits from ceiling junction box to the fittings shall be provided duly coupled at both ends. This shall be included within the scope of point wiring.)

- (i) Interconnecting wiring between switches within the switch box on the same circuit.

Measurement

- (a) Point Wiring (other than socket outlet points)

- (i) Unless and otherwise specified, there shall be no linear measurement for point wiring for light points, fan points, exhaust fan points and call bell points.

These shall be measured on unit basis by counting.

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Point Wiring for Socket Outlet Points

- (i) Unless and otherwise specified, there shall be no linear measurement for light plug (6 A) point and point wiring and on board plug point or as specified in the tender schedule documents.

- (ii) The power point outlet may be 16 A/6 A six pin socket outlet, where so specified in the tender documents.

Group Control Point Wiring

- (i) In the case of points with more than one point controlled by the same switch, such points shall be measured as per tender schedule documents.

- (ii) No recovery shall be made for non-provision of more than one switch in such cases.

Twin Control Light Point Wiring

- (i) A light point controlled by two numbers of two way switches shall be measured as two points from the fitting to the switches on either side and classified according to tender schedule.

- (ii) No recovery shall be made for non-provision of more than one ceiling rose or connector in such cases.

Wiring System

(i) Wiring shall be done only by the looping system. Phase/live conductors shall be looped at the switch box. For point wiring, neutral wire/earth wire looping for the 1st point shall be done in the switch box; and neutral/earth looping of subsequent points will be made from point outlets.

(ii) In wiring, no joints in wiring will be permitted any where, except in switch box or point outlets, where jointing of wires will be allowed with use of suitable connector.

(iii) The wiring throughout the installation shall be such that there is no break in the neutral wire except in the form of linked switchgear.

(iv) Light, fans and call bells shall be wired in the 'lighting' circuits. 15A/16A socket outlets and other power outlets shall be wired in the 'power' circuits. 5A/6A socket outlets shall also be wired in the 'power' circuit both in residential as well as non-residential buildings.

(v) Colour Coding

Following colour coding shall be followed in wiring: Phase : Red/Yellow/Blue.(Three phase wiring) Live : Red (Single phase wiring)

Neutral : Black Earth: Yellow/Green.

(vi) Termination of Circuit into Switchboard

Circuit will consist of phase/neutral/earth wire. Circuit will terminate in a switch board (first tapping point, where from point wiring starts) in following manner:

Phase wire terminated in phase connector. Neutral wire terminated in neutral connector. Earth wire terminated in earth connector. The switchboard will have phase, neutral and earth terminal connector blocks to receive phase/ neutral/ earth wire.

Run of Wiring

(i) The type of wiring shall be as specified in the tender documents namely, surface conduit/recessed conduit, steel/PVC, channel.

(ii) Surface wiring shall run as far as possible along the walls and ceiling, so as to be easily accessible for inspection.

(iii) Above false ceiling, Wiring will be done in recessed conduit or surface steel conduit.

(iv) In recessed conduit system, routes of conduit will be planned, so that various inspection boxes provided don't present a shabby look. Such boxes can be provided 5 mm above plaster level, and they can be covered with plaster of paris with marking of junction boxes.

(v) Where number of electrical services like electrical wiring, telephone wiring, computer cabling, pass through corridors, it may be proper to plan such service with properly designed ALUMINUM/PVC channels duly covered by a false ceiling, so that subsequently such service can be maintained and additional cables can be provided.

(vi) Generally conduits for wiring will not be taken in floor slabs. When it is unavoidable special precaution to be taken to provide floor channels with provision for safety and maintenance. Alternatively false flooring can be provided.

Passing through Walls or Floors

- (i) When wiring cables are to pass through a wall, these shall be taken through a protection (steel/ PVC) pipe or porcelain tube of suitable size such that they pass through in a straight line without twist or cross in them on either porcelain, PVC or other approved material.
- (ii) All floor openings for carrying any wiring shall be suitably sealed after installation.

Joints in Wiring

- (i) No bare conductor in phase and/or neutral or twisted joints in phase, neutral, and/ or protective conductors in wiring shall be permitted.
- (ii) There shall be no joints in the through-runs of cables. If the length of final circuit or submain is more than the length of a standard coil, thus necessitating a through joint, such joints shall be made by means of approved mechanical connectors in suitable junction boxes.
- (iii) Termination of multistranded conductors shall be done using suitable crimping type thimbles.

Ratings of Outlets

- (i) Incandescent lamps in residential and non-residential buildings shall be rated at 60W and 100W respectively.
- (ii) Ceiling fans shall be rated at 60W. Exhaust fans, fluorescent tubes, compact fluorescent tubes, HPMV lamps, HPSV lamps etc. shall be rated according to their capacity. Control gear losses shall be also considered as applicable.
- (iii) 6A and 16A socket outlet points shall be rated at 100W and 1000W respectively, unless the actual values of loads are specified.

Capacity of Circuits

- (i) Lighting circuit shall feed light/fan/ call bell points. Each circuit shall not have more than 800 Watt connected load or more than 10 points whichever is less. However, in case of CFL/LED FITTINGS points where load per point maybe less, number of points may be suitably increased.
- (ii) Power circuit in non-residential building will have only one outlet per circuit.
- (iii) Load more than 1 KW shall be controlled by suitably rated MCB and cable size shall be decided as per calculations.

(iv) Power Wiring with Bus Trunking

It is permitted to meet large-scale power requirement in a hall, or floor, with use of single phase or 3 phase bus bars running inside a metal enclosure. This will be provided with careful design and use of factory fabricated bus- trunking of reputed make, conforming to relevant BIS standards and with standard accessories like End feed unit, tap off with necessary safety features like over current, short-circuit and earth fault protection. Such trunking will be of specified breaking KA rating.

Socket Outlets

- (i) Socket outlets modular type shall be 6A 3/5 pin, 16 Amp 3/5 pin or 16/6 Amp 6 pin. The third

pin shall be connected to earth through protective (loop earthing conductor)

(ii) Conductors connecting electrical appliances with socket outlets shall be of flexible type with an earthing conductor for connection to the earth terminal of plug and the metallic body of the electrical appliance.

(iii) Sockets for the power outlets of rating above 1KW shall be of industrial type with associated plug top and controlling MCB OR as per tender schedule.

(iv) Where specified, shutter type (interlocking type) of sockets shall be used

(v) Every socket outlet shall be controlled by a switch or MCB, as specified. The control switch/MCB shall be connected on the 'live' side of the line.

(vi) 5A/6A and 15A/16A socket outlets shall be installed at the following positions, unless otherwise specified.

(a) Non-residential buildings – 23 cm above floor level.

(b) Kitchen/Canteen – 23 cm above working platform and away from the likely positions of stove and sink.

(c) Bathroom – No socket outlet is permitted for connecting a portable appliance thereto. MCB/IC switch may be provided above 2 m for fixed appliances, and at least 1 m away from shower.

(vii) Unless and otherwise specified, the control switches for the 6A and 16A socket outlets shall be kept along with the socket outlets.

Cables : All cables including flexible cables shall be ISI approved and confirming the ISI specifications.

(i) Copper conductor cable only will be used for submain/ circuit/ point wiring.

(ii) Minimum size of wiring:

Light Wiring : 1.5 sqmm

Power Wiring : 4 sqmm

Power circuit rated : More than 1 KW , Size as per calculation

(iii) Insulation : Copper conductor cable shall be PVC insulated conforming to BIS Specification.

iv. Multi stranded : Cables are permitted to be used.

Flexible Cable

(i) Conductor of flexible cables shall be of copper. The cross sectional area of conductor for flexible cable shall be as per design.

(ii) Only 3 core flexible cables shall be used for connecting single-phase appliances.

(iii) Unless the flexible cables are mechanically protected by armour, or tough rubber, or PVC sheath, these shall not be used in workshops and other places where they are liable to mechanical damage.

(iv) Flexible cable connection to bell push from ceiling rose shall be taken through steel conduit/metallic casing and capping.

Wiring Accessories

(a) Control Switches for Point

(i) Control switches (single pole switch) carrying not more than 16A shall be modular type. The switch shall be 'On' when the knob is down.

(ii) DELETED.

(iii) It is recommended to provide double pole MCB in proper enclosures power outlet for window type AC units, geysers etc.

(b) Switch Box

(i) Switch box shall be hot dip galvanized, factory fabricated, suitable in size for surface/ recess mounting and suitable in size for accommodating the required number of switches and accessories (where required to be used for applications other than modular switches/ sockets).

II) Switch box also can be of non-metallic material. The technical sanctioning authority will approve specified makes of reputed quality and specifications.

(c) Switch Box Covers (for application other than modular type)

Phenolic laminated sheets of approved shade shall be used for switch box covers. These shall be of 3 mm thick synthetic phenolic resin bonded laminated sheet as base material and conforming to grade P-I of IS 2036 : 1974.

(d) Ceiling Rose

(i) A ceiling rose shall not be used on a circuit, the voltage of which normally exceeds 250V.

(ii) Only one flexible cord shall be connected to a ceiling rose. Specially designed ceiling roses shall be used for multiple pendants.

III.) A ceiling rose shall not embody fuse terminal as an integral part of it.

(e) Lamp Holders

(i) Lamp holders may be batten, angle, pendant or bracket holder type as required. The holder shall be made of brass and shall be rigid enough to maintain shape on application of a nominal external pressure.

There should be sufficient threading for fixing the base to the lamp holder parts so that they do not open out during attention to the lamp or shade.

ii.) Lamp holders for use on brackets and the like shall have not less than cm nipple, and all those for use with flexible pendant shall be provided with cord grips.

iii.) All lamp holders shall be provided with shade carriers.

iv) Where center contact Edison Screw lamp holders are used, the outer screw contact shall be connected to the 'middle wire', or the neutral conductor of the circuit.

(f) Fittings

Types : The type of fittings shall be as specified in tender documents.

Indoor Type Fittings

(i) Where conductors are required to be drawn through tube or channel leading to the fitting, the tube or channel must be free from sharp angles or projecting edge, and of such size as will enable them to be wired with the conductors used for the final circuit without removing the braiding or sheathing. As far as possible all such tubes or channels should be of sufficient size to permit looping back.

ii) Wires used within prewired fittings shall be flexible with PVC insulation and copper conductors. The leads shall be terminated on built-in-terminal block, ceiling rose or connector, as required.

iii) Fittings shall be installed such that the lamp is at a height of 2.4m above floor level, unless otherwise directed by the Engineer-in-charge.

Attachment of Fittings and Accessories

(a) Conduit Wiring System

(i) All accessories like switches, socket outlets, call bell pushes and regulators shall be fixed in flush pattern inside the switch/regulator boxes. Accessories like ceiling roses, brackets, batten holders etc. shall be fixed on outlet boxes. The fan regulators may also be fixed on outlet boxes, if so directed by the Engineer-in-charge.

ii) ALUMINUM alloy or cadmium plated iron screws shall be used to fix the accessories to their bases.

iii) The switch box/regulator box shall normally be mounted with their bottom 1.25 m from floor level, unless otherwise directed by the Engineer-in-charge.

(b) Fixing to Walls and Ceiling

(i) Wooden plugs for fixing to wall/ceiling will not be allowed. Fixing will be done with the help of PVC sleeves/Rowel plugs/ dash fasteners as required.

(ii) Drilling of holes shall be done by drilling machines only. No manual drilling of hole will be allowed.

Fans, Regulators and Clamps

(a) Ceiling Fans

(i) Ceiling fans including their suspension shall conform to relevant Indian Standards.

(ii) The capacity of a ceiling fan to meet the requirement of a room with the longer dimension D meters should be about $55 D \text{ m}^3/\text{min}$.

(iii) The height of fan blades above the floor should be $(3H + W)/4$, where H is the height of the room, and W is the height of the work plane.

(iv) The minimum distance between fan blades and the ceiling should be about 0.3 meters.

(v) When actual ventilated zone does not cover the entire room area, then optimum size of ceiling fan should be chosen based on the actual usable area of the room, rather than the total floor area of the room.

(vi) Step Type Electronic regulators should be used instead of resistance type regulators for controlling speed of fans.

(vii) All ceiling fans shall be wired to ceiling roses or to special connector boxes, and suspended from hooks or shackles, with insulators between hooks and suspension rods. There shall be no joint in the suspension rod.

(viii) For wooden or steel joists and beams, the suspension shall consist of GI flat of size not less than 40 mm x 6 mm, secured on the sides of the joists or beams by means of two coach screws of size not less than 5 cm for each flat. Where there is space above the beam, a through-bolt of size not less than 1.5 cm dia, shall be placed above the beam from which the flats are suspended. In the latter case, the flats shall be secured from movements by means of another bolt and nut at the bottom of the beam. A hook consisting of MS rod of size not less than

1.5 cm dia shall be inserted between the MS flat through oval holes on their sides. Alternatively, the flats may be bent inwards to hold tightly between them by means of a bolt and nut, a hook of 'S' form.

(ix) In the case of 'I' beams, flats shall be shaped suitably to catch the flanges and shall be held together by means of a long bolt and nut.

(x) For concrete roofs, a 12 mm dia. MS rod in the shape of 'U' with their vertical legs bent horizontally at the top at least 19 cm on either side, and bound to the top reinforcement of the roof.

(xi) In buildings with concrete roofs having a low ceiling height, where the fan clamp mentioned under sub-clause (v) above cannot be used, or wherever specified, recessed type fan clamp inside metallic box,

(xii) Canopies on top of suspension rod shall effectively hide the suspension.

(xv) The leading in wire shall be of nominal cross sectional area not less than 1.5 sq. mm. and shall be protected from abrasion.

(xvi) Unless otherwise specified, all ceiling fans shall be hung 2.75 m above the floor.

(xvii) In the case of measurement of extra down rod for ceiling fan including wiring, the same shall be measured in units of 10 cm. Any length less than 5 cm shall be ignored.

(xviii) The wiring of extra down rod shall be paid as supplying and drawing cable in existing conduit.

(b) Exhaust Fans

(i) Exhaust fans shall conform to relevant Indian Standards.

(ii) Exhaust fans shall be erected at the places indicated by the Engineer-in-charge. For fixing an exhaust fan, a circular opening shall be provided in the wall to suit the size of the frame, which shall be fixed by means of rag bolts embedded in the wall. The hole shall be neatly plastered to the original finish of the wall. The exhaust fan shall be connected to the exhaust fan point, which shall be wired as near to the opening as possible, by means of a flexible cord, care being taken to see that the blades rotate in the proper direction.

iii) Exhaust fans for installation in corrosive atmosphere, shall be painted with special PVC paint or chlorinated rubber paint.

Installation of exhaust fans in kitchens, dark rooms and such other special locations need careful consideration; any special provisions needed shall be specified.

(c) Regulators

The metallic body of regulators of ceiling fans/exhaust fans shall be connected to earth by protective conductor.

Marking of Switch Boards

(i) Marking of each Main Board

Each main board/submain board shall be marked indicating rating of each incoming/outgoing switch and the details of load/area it feeds. Detail/size of incoming and outgoing cable also shall be marked indicating from where the incoming cable has originated.

(ii) Marking of Distribution Board

Each Distribution Board shall be marked indicating detail of incoming switch (Size of cable and from where it is fed) and marking of each outgoing MCB indicating the area it feeds. Suitable marking sticker will be suitably fixed to indicate such details.

(iii) Marking of Power/Light DBs

Power/light DBs shall be marked 'P' and 'L' respectively.

(iv) Marking for Non-essential/Essential/UPS/Switch Boards

Each switchboard shall be marked essential/non-essential/UPS to indicate the nature of such switchboards.

(vi) Marking of Main Earthing Terminal

Main earthing terminals in main/submain switchboard shall be permanently marked, as "Safety Earth – Don't Remove".

LT Distribution Switchgear

Only following type switchboards will be used:
Main/Submain switchboard of cubicle type or as per tender schedule.

(a) DBs – Conventional DBs of reputed makes can also be used with the approval of technical sanctioning authority in addition to prewired DB or as per tender schedule.

Location of Switchboards

(i) Switchboards are to be located in common areas like corridors, lobby etc. and not to be located in locked room.

(ii) Switchboard shall be located only in dry situation and in well-ventilated space. They shall not be placed in the vicinity of storage battery or exposed to chemical fume.

(iii) Switchboards shall not be erected above gas stove, or sinks or within 2.5 meter of any washing unit in washing rooms of laundries or in the bath rooms, toilets, or kitchen.

(iv) As far as possible main boards shall not be located in basement. Such main boards can be located in ground floor.

(v) It is preferable to locate floor main boards in rising main shafts of adequate size, with steel doors (having ventilation) or in suitable room.

(vi) Similarly DBs can be in suitable niches in corridor walls having doors.

(vii) Locating main boards under staircase or standing open in corridor is not a desirable practice, besides being highly unaesthetic.

(viii) The main switchboard, which receives power to the building, should be invariably located in a switch room, having round the clock access, for emergency attendance to the switchboard.

Note :

- (1) The installations shall generally be carried out in conformity with the Code of Practice for electricalwiring installation (system voltage not exceeding 650V) viz., I.S. 732: 1963 or the latest revision thereof.
- (2) Definitions: As given in I.S. Code of Practice shall apply.

ELECTRICAL INSTALLATIONS

CONCEALED CONDUITS IN SLAB/WALL, COLUMNS ETC. FOR, ELECTRICAL MAIN / SUB MAINS/POINT WIRING ETC.

It is necessary to lay, conduits for concealed runs of electrical mains/sub mains/point wiring etc. so that concreting work may not be held up. Schedule of items giving the approximate scope of work is given below, which the Main Building Contractor shall arrange to bring quantity of conduits, junction boxes, etc. on site and carry out work in coordination with civil works so that conduit work is not heldup. Specifications for the conduit pipe system will be as under :

1. 25mm/20mm dia Heavy gauge PVC FRLS conduit and its accessories.
2. Special deep junction boxes minimum 63mm deep.
3. The rectangular shaped junction boxes shall be made out of 16 gauge M.S . Sheets and painted with two coats of ready mixed oil paint of approved shade over a coat of zinc cromium primer. The box should have a cover of 16 gauge, which can be fixed to the box with screws. Suitable tapped holes shall be provided in corners of the box.
4. Make of conduits to be used shall be manufactured by one of the manufacturer/s as per the list attached.
5. Items which are incorporated in the works but are not functional because of chokage, non-traceability, poor workmanship, etc. will not be measured and will not be paid in the running accounts bills.

6. Installation of Conduit :

All conduits including bends, unions, junction boxes, etc. shall be cleaned before they are fixed in position. Conduits which are to be taken in the ceiling slab shall be laid on the prepared shuttering work of the ceiling slab before Concrete is poured. The conduits shall be properly tied to the reinforcement.

Conduits shall be concealed wherever specified in ceiling, walls, etc. as required. The conduits shall be laid in ceiling slab before pouring of Concrete. Care shall be taken to ensure that conduits are not displaced during the process of pouring and consolidating the concrete.

The following precautions shall be observed while installing the conduits:

- a) As far as possible bending shall be done at site in a workman like manner.
- b) Where a number of conduits converge, a large M.S.box shall be used to avoid crossing of conduits. Where conduits are installed in straight runs, draw boxes will be provided at centres not greater than 15 metres on straight runs and at every change in direction. No boxes will be provided in voids where access cannot be readily obtained.

The rate for rigid P.V.C conduit sleeves shall include for recesses and holes etc. in brick work for electrical conduits as shown on drawings and as directed on site and making good the same.

7. Conduits at beam/slab bottom shall be identified/ cleared, with appropriate size of GI wire inside and outside of conduit and provision is to be made to continue the conduit downward upto the switch board for termination.
8. The contractors are advised to note that before the plastering work is taken up the concealing of the vertical conduits is to be carried out to avoid unnecessary breaking of the walls at a later date. All vertical conduit drops that are to be concealed in walls/beams/columns are to be

carried out before casting/plastering by switch board/power plug boards etc. as per therelevant schedule of item of works.

ELECTRICAL INSTALLATION WORK

1. The quantities indicated in the schedule of quantities are only provisional and payment willbe made only as per actuals as ascertained by joint measurements.
2. Deleted.
3. Earthing from D.B. to switch Board and from thereon to the 5 Amps and 15 Amps pin socket points is to be extended and the same is mentioned the schedule. Forlight and fan points also earthing has to be extended a indicated in the Schedule and nothing extra will be paid for this work.
4. During execution of the electrical, Fire , Data, AC works like lying the conduit, AC drain pipe, Cables, Distribution board, point wiring, fire alarm & PA work etc, cutting and chasing of wall /flooring is to done carefully and has to be restricted to the minimum and the rates quoted for the respective items of work should include for patch – filling, plastered and finishing, including painting to match the colour of wall & flooring, if required.
5. Jumper holes for taking the wiring from one room to the other are to be made to the exact requirement and PVC sleeves of required size are to be provided for crossing the brick work and nothing extra will be paid for this work.
6. **It is the responsibility of the contractor to prepare the necessary drawings, test reports, etc., that are to be submitted to the Local Electricity Board if required.**
7. The contractor has to sign the declaration given below, agreeing to execute the service connection works at the standard schedule rates of the Local Electricity Board.
8. If the contractors have to offer any suggestion or if their rates are based on any presumption, not spelt out specifically anywhere in the tender documents they should necessarily make a suitable mention about the same, while forwarding the tender. Any such statement, after submission of the tender, will not be entertained.
9. **All necessary electrical layout/fitting fixture layout/Telephone & Data cable network/,Fire Alarm layout etc shall be got approved from LIC before execution of work.**
10. As built drawing layout of electrical, telephone, data cabling , Fire Alarm and all other services shall be submitted to LIC after execution work
11. Manufactures certificate/Guarantee or Warrantee certificate/ Manual of Electrical installation shall be produced as desired by LIC.
12. For structural cabling work, Fire alarm work & Public address system the experienced agency has to be engaged. Approval of agency to be obtained from LIC before executionof work.

TECHNICAL DETAILS :**T.D.1**

All items of works are to be carried out strictly as per I.E.rules 1958 I.S.732, I.S.3043/1966 or their latest version. In case the tenderer observes any deviation in the provision made in the schedule of works, vis-a-vis provision of the above given publications he is advised to bring it out clearly while making his offer.

T.D.2

- a) Rewirable switch fuse units beyond 63 amps will not be accepted.
- b) Installation: Rates quoted by the tenderer should include for the following works unless stated otherwise.
 - i) Installation of switches on slotted angle iron frame work of adequate section. The main panel board is to be installed on the floor with adequate supports from wall at the back to make the entire arrangement adequately sturdy
 - ii) Connecting the main switch with meter, busbar distribution board with adequate length and section of PVC insulated leads in MS conduits or flexible conduits as per requirement of site or as per tender schedule.
 - iii) Labelling of the switches to indicate clearly the areas or the load being controlled by them.
 - iv) Connecting the earth wire run along with mains/cables etc. to the earth link by providing a suitable socket etc.
- c) BUSBAR;
 - i) All busbars are to be made of tinned copper flats of given section, unless specified otherwise.
 - ii) Unless specified otherwise all busbars are to be designed taking maximum current density as 800amps. per sq. inch. Or as per tender schedule.
 - iii) All busbars are to be covered with PVC sleeves of red, yellow, blue and black colours etc indicate various phases and neutral bar clearly. Alternatively, PVC insulation tape of the aforementioned colours is to be used for identification of phases and neutral as indicated above and required holes are to be drilled and brass bolts and nuts are to be provided for tapping connections as required.
- d) All locally fabricated elements of the main panel boards (such as angle iron frame work, busbar chamber, distribution board etc) should be provided with the final coat of battleship grey synthetic enamel paint after erection and all switches, busbars, distribution boards provided to main panel boards are to be labelled.

T.D 3

- a) Drawing showing details of installation indicating very clearly the sections of slotted angle iron proposed to be used, the depth to which the members are to be grouted inside the wall, mode of their support at the floor level including grouting inside the floor should be got approved by the contractor before actual execution of work.

- b) The drawing showing the arrangement of the main distribution board, floor distribution boards showing the actual dimension of switch gears, busbar chambers, distribution boards etc. should be got approved by the contractor before fabrication.
- c) After execution of the work, the contractor has to submit completion reports with drawings of the entire installation showing the manner in which the work has been actually carried out in triplicate to LIC of India. This is in addition to the drawings which the contractor is required to submit with completion report/test reports as per the requirement of the local electric supply authority.
- d) It is the responsibility of the contractor to attend to the inspection of the installation if carried out by the inspecting authority of the state government as mentioned in TD 1 since the works are to be carried out strictly as per IE rules and relevant Indian Standard specifications, the defects indicated by the above given inspecting authority will have to be rectified by the contractor at no extra cost to LIC of India.
- e) It is responsibility of the contractor to obtain electrical service connection/ enhancement of load as the case may be to the premises. In case it is observed that the contractor is lacking in efforts to obtain electrical service/ enhancement of load as the case may be to the premises the Chief Engineer at his discretion may impose liquidated damages at the rate as mentioned in the respective clause of the general conditions of contract for delay in availability of electrical service/ enhancement of load and consequent delay in commissioning of the installation.
- f) It will be the contractor's responsibility to check the concealed conduit work carried out by the building's contractor within a period of one month of taking over the electrical work at site and to certify that the concealed conduit work is in order.

T.D 4:

- a) Insulated cables are to be laid on the walls, beams, ceilings etc. by providing plugs of wellseasoned wood, cemented into the walls to within 6.5 mm of the surface. Within the electrical shaft, the cables are to be run on MS clamps made out of angle, channel or flat section of required thickness grouted in the wall securely. The cable trenches in the meter room in which the cables have been laid are to be filled up with sand.
- b) The under ground cables laid in the trenches are to be laid in suitable dia. Hume pipes at all road crossings. Cable in underground is to be laid with necessary excavation of trench of size 600 mm deep and 450 mm width and refilling up to 80 mm of the trench with sand, laying the cable and covering the cable with bricks on the three sides and back filling the excavated materials and making good the same and consolidating the excavated area complete in all respects.
- c) All cable terminations inside switches, busbars, distribution and switch boards should be made in a workman like manner by providing sockets of suitable amperage, compression glands of suitable dia. porcelain connectors etc. as required. Rate quoted should be inclusive of all these accessories and nothing extra will be considered on this account.
- d) Measurements for mains and cables will be taken as per IS 5908-1979 or its latest version.

T.D.5

- a) Earthing : The work of providing earth electrode is to be done strictly according to IS 3043-1966 or its latest version.

1. G.I. PLATE EARTHING;

G.I. Plate of size 600 x 600 x 6.0 mm is to be burried 2.5 mtrs below ground level. Necessary watering arrangement with suitable size G.I pipe and funnel is to be made. 2runs of 8SWG bare copper wire from the bottom of the plate are to be taken out and terminated to the main panel board.

Suitable size G.I protection pipe for GI earth flats is to be provided directly from the earth pit and upto 3 mtrs height on wall and necessary masonry chamber with hinged type lockable cast iron inspection cover as per IS specification is to be provided. Necessary alternate layers of charcoal/coke and salt are to be provided. The earth stations are to be provided with minimum 4.5 mtrs away from the foundation of the building.

2. G.I. PIPE EARTHING;

Same as above as in G I plate earthing but with 40 mm G.I. pipe of minimum, 4.50 mtr length.

3. COPPER PLATE EARTHING;

Same as above as in GI plate earthing but copper plate of size 600 mm x 600 mm x 3.0 mm (without any joint) is to be used and 2runs of 8SWG bare copper wire from the bottom of the plate to be provided as specified in the schedule.

- b) For pump set motors, pipe electrodes are to be provided whereas for other electrical installation plate earthing can be provided unless stated otherwise.
- c) The work of provision of earth station should include in addition to provision of earth electrodes bringing the earth leads upto test terminal block installed at a height of 2.75 mtrs from ground level in case of lightning conductors. The measurement for earth leads if included in the schedule of work and payable separately, the above measurement will be excluded from the separate measurement.
- d) The earth resistance is to be tested with suitable earth megger and the earth electrodes are to be installed minimum 4.5 mtrs. away from the premises..

FIXING OF TUBE LIGHT FITTINGS;

- a) LED Tube light fittings on ceiling are to be fixed with suspension rods not exceeding 750 mm made out of minimum 16 gauge HGBE conduit of suitable size with necessary ball and sockets, chuck nuts etc. Ball and sockets are to be fixed to TW round blocks securely fixed on the ceiling. The down rods are to be painted with two coats of synthetic enamel paint of approved colour if required.
- b) Fittings on the wall are to be directly fixed on the TW round blocks of suitable size as mentioned above.

T.D. 7 DETAILS FOR FIXING DBs & SWITCH BOXES:

Sl.No.	Item	Height in mm from F.F.L. to the bottom of the SB/DB (preferably as directed at site)	If wall glazed tiles are used in walls
1.	Distribution works	1600	
2.	Switch Box	1200	

3.	Power Plug box in bath room	1600	Clear 50mm above the wall glazed tiles levels whichever is higher is to be followed.
4.	Power Plug box for water cooler	1200	-do-
5.	Independent Power Plug point box	300	-do-
6.	Power Plug Box in kitchen	750	-do-
7.	Power Plug Box in Tea Room	750	-do-
8.	Exhaust Fan point (By the side of the window)	1300	-do-

The open end of the concealed conduit shall be closed with plastic plug and should flush with the plaster surface.

Earth studs (screws) are to be provided in switch boxes on either side of the box for earthing.

TECHNICAL SPECIFICATIONS FOR INTERIOR AND CIVIL WORKS

Material and Workmanship

1. All materials brought on the site of works and meant to be used for the said project site, shall be the best of their respective kinds and to the approval of the Architect/Employer. The Architect/Employer or his Representative will accept that the materials are really the best of their kinds, when it is proved beyond doubt that no better materials of the particular kind in question are available in the market.
2. The workmanship is to be the best available and of a high standard, use must be made of a special tradesman in all aspects of the work and allowances must be made in the rates for so doing.
3. Samples of all materials shall be got approved from the Architect/Employer and shall be deposited with them before the order for the materials are placed with the suppliers/manufacturers. The materials brought for the works shall conform in every respect with approved samples.
4. Workmanship: All works shall be to true line, level, plumb and square corners, edges and arises in all cases shall be unbroken and finished neat. Only first class workmanship will be accepted. Contractor shall maintain uniform quality and consistency in workmanship throughout the execution of the work.
5. Skilled Mistries/tradesman for the respective trades shall be employed by the Contractors to check the work in progress and to instruct and extract the right kind of workmanship from the men employed on the works. Instructions given to such Mistries by the Architect/Employer shall be carried out with a view to get the work executed in a neat and workman like manner, according to the specifications.
6. The Architect/Employer may order the inspection of any finished work as he chooses and in a manner he decides, and the Contractors shall bear all expenses in this connection. If the results of such inspection prove that the material used and/or workmanship is not of the standard required, the work will be rejected and removed forthwith and be replaced by works of the accepted standard of quality and material.
7. The materials and items to be provided by the Contractor shall be approved by the Architect/Employer in accordance with any samples, which will be submitted for approval by the Contractor and generally in accordance with the specifications. Also if products are specified in the specification and/or bill of brand, trade name or catalogue reference, the Contractor will be required to obtain the approval of the Architects before using a material. The Contractor shall produce all invoices vouchers or receipts for any materials if called upon to do so by the Employer/Architects.
8. Samples of all materials are to be submitted to the Architects for approval before the Contractor orders or deliver the materials at site. Samples together with their packing are to be provided free of charge by the Contractor and should any materials be rejected, they will be removed from the site at the Contractor's expense. All samples will be retained by the Employer/Architects for comparison with materials, which will be

required to submit specimen finishes of colours, fabrics, etc. for the approval of the Architect/Employer before proceeding with the work.

1. All ends of plywood/Block board/particle board/MDF/HDF shall be fitted with minimum 3 mm T.W. lipping strips.
2. All internal surfaces of furniture shall be finished with French polish wherever any finishes not specified.

Joinery in Woodwork

Joinery is to be prepared immediately after the placing of the contact framed up, bonded and wedged up. Any portions that are warped or found with other defects are to be replaced before wedging up. The whole of the work is to be framed and finished in a proper workman like manner in accordance with the detailed drawings, wrought and whenever required fitted with all necessary metal ties, straps, belts, screws, glue, etc., running beaded joints are to be cross-tongued. Joiners work generally to be finished with the sand/glass paper.

All joints will be standard mortise and tenon, dowl, dovetail and cross-halved. Nailed or glued butt joints will not be permitted. Screws, nail etc., will be stated, from or wire of oxidized "Nettle Fold" make unless specified where mortise and tenon joints are used, tenons should fit the mortises exactly.

Nailed or glued butt joints will not be permitted, except in exceptional cases with approval of Architects/Employer.

Where screws shown on a finished surface, these will be sunk and the hole plugged with wood plug of the same wood and grains of the finished surfaces unless detailed otherwise. Nail on finished surfaces will be neatly punched and the hole filled with wood filer to match the colour.

Should joints in joiner's work open, or other defects arise within the period stated for defect liability in the contract and the cause thereof be deemed by the Employer/Architects to be due to such defective joinery shall be taken down, and refilled, redecorated and/or replaced if necessary and any work disturbed shall be made good at the Contractor's expense.

Nails, spikes and bolts shall be of lengths and weights approved by the Employer/Architect. Nails shall comply with IS 1959-1960 or approved equivalent quality sample. Brass headed nails are to comply with B.S. 1210. Wire staples shall comply with B.S. 1994 or equivalent.

The contact surfaces of dowel, tennons, wedges, etc., shall be glued with an approved adhesive.

Where glued joinery and carpentry work is likely to come into contact with moisture, the glue shall be waterproof.

All dovetail joints shall be further strengthened with M.S. cleats for cabinet furniture like tables, storage units, etc.

Hardware

The hardware throughout shall be of approved manufacturer or supplier well made and equal to in every respect to the samples deposited with the Architect/Employer. The Contractor may be required to produce and provide samples from many different sources before the Employer/Architects take decision and nothing extra shall be paid for this.

Fitting generally shall be brass oxidized, unless otherwise specified and shall be suitable for their intended purpose. In any case, it will have to be approved by the Employer/Architect before the Contractor procures it at the site of work.

Screws are to match the finish of the article to be fixed, and to be round or flat headed or counter sunk as required.

The Contractor should cover up and protect the metal surfaces such as brass, bronze, SS etc. with a thick grease or other suitable protective material, renew as necessary and subsequently clean off and clear away on completion.

ALUMINUM and stainless steel shall be of approved manufacture and suitable for its particular application. Generally the surface of ALUMINUM shall have an anodized finish and both shall comply with the samples approved by the Employer/Architect. All stainless steel sheets shall be 304 S. S. Japan or equivalent with gauge as specified but not thinner than 16G.

All steel, brass, bronze, ALUMINUM and stainless steel articles shall be subjected to a reasonable test for strength, if so required by the Employer/Architect at the Contractor's expense.

All brazing and welds are to be executed in a clean and smooth manner rubbed down and left in the flattest and tidiest way, particularly where exposed.

Chromium plating shall be in accordance with I. S. standard or as per approved specifications for normal outdoor conditions and shall be on a base material of copper or brass.

Glazier

All glass to be of approved manufacturer complying with IS 1548-1966 as per approved quality and sample to be of the selective qualities specified and free from bubbles, smoke, wanes, waves, air holes and any other defects.

Polished plate glass shall be "glazing glass" (G.G.) quality and that for mirrors shall be "silvering quality" (S.Q.) confirming to I.S.3438 – 1965 or as per approved sample and quantity.

The compound for glazing to metal is to be a special non-hardening compound manufactured for the purpose and of a brand and quality approved by the Employer/Architect.

While cutting glass, proper allowance is to be made for expansion. Each square of glazing to be on whole sheet. On completion of work clean all glass inside and outside, replace all cracked scratched and broken panes and leave in good condition.

Paint and Polishes

All material required for the works shall be of specified and approved manufacturer, delivered to the site in the manufacturer's containers with the seals, etc., unbroken and clearly marked with the manufacturer's name or trade mark with a description of the contents and colour. All materials are to be stored on the site of work.

Spray painting with approved machines will be permitted only if written approval has been obtained from the Employer/Architect prior to painting. No spraying will be permitted in the case of priming coats where the soiling of adjacent surfaces is likely to occur. The nozzle and pressure to be so operated as to give an even coating throughout to the satisfaction of the Employer/Architect. The paint used for sprayings is to comply generally with the specifications concerned and is to be specially prepared by the manufacturer for spraying. Thinning of paint made for brushing will not be allowed.

Wood preservative shall be Solignum or other equal and approved impregnating wood preservative and all concealed woodwork shall be treated with wood preservative. All brushes, tools, pots, kettles, etc., used in carrying out the work shall be clean and free from foreign matter and are to be thoroughly cleaned out before used with a different type of class of material. All iron or steel surfaces shall be thoroughly scraped and rubbed with wire brushes and shall be entirely free from rust, mill scale, etc., before applying the priming coat.

Surfaces of new woodwork, which are to be painted, are to be rubbed down, cleaned down to the approval of the Architect/Employer.

Surfaces of previously painted wood work which are to be painted are to be cleaned down with soap and water detergent solution or approved solvent to remove dirt, grease, etc. Whilst wet the surface shall be flattened down with a suitable abrasive and then rinsed down and allowed to dry. Minor areas of defective paint shall be removed by scraping back to a firm edge and the exposed surface touched in with the primer as described and stopped with putty. Where woodwork has been previously painted or polished and is to be newly polished, scraping, burning off or rubbing down, should be carried out properly.

Surfaces of previously painted metal which shall be painted are to be cleaned down and flattened down as described in surfaces of any rust and loose scale shall be removed completely by chipping, scraping and wire brushing back to the bare metal touched in with primer as described.

Upholstery

This will be of first class standard workmanship with webbing, no sag springs, coiled springs, padding and as specified on drawing. Covering fabrics will be soon tufted and corded as shown on drawing and as approved by the Employer/Architect.

"Cushion Vents" should be installed at the back or under side of seat cushions (especially those covered in leather, vinyl plastic or very tightly woven fabric) to allow air to escape and to prevent torn steel.

Finished timber shall be of the type specified, furnishing fabrics, colour, pattern, substance to be as specified and manufactured or supplied by the Company specified, no variations of this will be permitted unless with prior approval of the Architect/Employer.

Polish

French polish: The basic material shall be shellac dissolved in methylated spirit. Preparation: The timber must be well sanded and cleaned and the grain filled with grain filler. Any staining must be done before applying the polish.

Equipment: The polishing rubber, the most important implement in Fresh polish shall consist of a pad of cotton wool, which acts as a reservoir for the polish, and a cover of a soft white linen or cotton fabric similar to a well worn handkerchief, which acts as filler. The rubber must never be dipped into the polish on to the pad with the cover removed.

Application: Work evenly over the surface with a slow figure of eight motion until the timber is coated with a thin layer of polish. The object is to apply a series of thin coats, allowing only a few minutes for drying between the coats. When a level and even bodied surface is obtained the work is ready for the second stage i.e., spiriting off.

Allowing the work to stand for at least eight hours, then take a fresh rubber with double thickness of cover materials and charge it with methylated spirit. The object of spiriting off is to and remove the rubber marks and to give the brilliance of finish.

Finally, work in the direction of the grain and continue until the surface is free from smears and rubber marks then leave to harden off.

Wax polish: Wax polish shall contain silicones and driers. A good silicon wax is to be used, not a creamy or spray. The timber shall be sealed first with another finish such as Ronseal, before applying the wax.

Application: Apply a light coat of the sealer by brush or cloth direct to the unfilled timber, working it well in and finishing evenly with the grain. Allow to dry thoroughly then sand lightly with fine abrasive paper. Apply a heavy coat of wax by cloth or on flat surfaces, with a stiff brush. Work well into the timber and finish off by stroking with the grain before leaving to harden. Leave for several hours before rubbing up with a soft brush. Finally, buff the grain with a soft cloth.

Melamine: This shall be applied where natural grain of the wood is required to be shown. Melamine gives uniform surface, which resists boiling water.

Application: Clean off all grease and wax with an abrasive and white spirit, this should not be applied in humid conditions.

Apply the same coat, preferably of clear hard glaze with a cloth pad. Leave this to dry for at least six hours, then apply the coat with paint brush - off you wait for longer than 24 hours between coats, rubbed down the previous coats with fine glass paper or medium grade of steel wool. Obtain a matt finish, if required, by giving a final coat of clear Ronseal Matt Coat.

Timber

All internal frame works shall be of central province teak wood (C.P.T.W.) unless otherwise specified. All exposed woodwork shall be of first quality B.T.C. grade teak only or as specified.

All the wood shall be properly seasoned, natural growth and shall be free from worm holes, loose or dead knots or other defects, saw die square and shall not suffer warping, spitting or other defects.

The moisture content shall not exceed 12%.

All internal frameworks shall be treated with approved wood preservative.

All wood brought to site shall be clean, should not have any preservative or Othercoating/covering.

All rejected, decayed bad quality wood shall be immediately removed from site. All

wood brought to site must be stacked stored properly as per instruction.

PLYWOOD

Only B.W.R. grade phenol formaldehyde bonded hot pressed plywood generally confirming to I.S.I. 303 of approved make shall only to be used.

H.P Laminates

Laminates where specified shall be of approved brand, type, texture and thickness and manufactured as per IS:2046-1969. Fixing of laminates shall be done as per best trade practices and strictly as per printed instructions of the manufacturers using Phenol Formaldehyde Synthetic Resin Adhesive of approved make. Unless otherwise indicated laminates shall be 1.5 mm thick for horizontal surfaces, 1.0 mm thick for vertical surfaces and 0.8 mm thick on internal surface.

Iron Mongery

All finish hardware shall be well made, reasonably smooth and free from sharp edges and corners flaws and other defects and shall be as per relevant Indian Standard Code. Unless otherwise required, all finish hardware shall be polished brass.

All hardware shall be of approved make and shall be specifically got approved by the Architect/Employer before ordering. No fittings and fixtures shall be fixed before all major work is over. While fixing correct handling of fixtures shall be ensured.

All finish hardware shall be fixed by skilled Carpenters experienced in this work. Work shall be done as per manufacturers printed instructions and to the satisfaction of the Architect/Employer.

All hardware fixed to respective locations shall be adequately protected from damage and splashes of mortars and paints by covering suitable with Jute Cloths/Black PVC sheet till handing over the work to the Employer to his satisfaction. The finished hardware shall be absolutely clean without any foreign materials and fully showing the original finish in its best condition.

TESTING OF MATERIALS: Table-A

Sr. No.	Materials	Test	Frequency
1	Timber	a) Moisture content b) Specific gravity c) Species in sample of teak wood.	One test for every 30cum or part thereof.
2	Flush Door	a) End Immersion b) Knife c) Adhesion	Destructive test based on no. of shutter. 1-100 one test 101-200 two test 201-500 three test 500 & above four test
3	CHAIRS	<u>Polyurethane Foam: Seat</u> a) Thickness, mm b) Density, Kg/m ³ c) Hardness, on Hamden Machine at 25% Compression <u>Polyurethane Arm Rest</u> a) Hardness (Shore A) <u>M.S. Black Powder Coating of Tube</u> a) Stroke Length, mm b) Pressure force applied 450N <u>Fabric</u> a) Colour fastness to light b) Colour fastness to rubbing c) Tear Strength d) Abrasion Resistance (end point Thread) e) Breaking strength f) Elongation g) Width h) G. S. M. i) G.L.M. <u>Hydraulic Cylinder</u> Pressure Testing	One test of each type of chair where tender qty. is more than 50 chairs.
4	Plywood/Board	a) Identification (Physical verification) b) Dimensional Tolerance c) Moisture content	One test from each Brand / makes as per relevant IS codes
5	Modular Furniture	<u>M S Frame</u> a) Hardness, against scratch. b) Impact Resistance. c) Thickness of section, mm d) Thickness of powder coating, micron. <u>Particle Board 12 mm thick.</u> a) Thickness of Particle Board, mm b) Thickness of lamination, mm c) Moisture content, %	One test from each source.



		<u>Particle Board 25 mm thick.</u> a) Thickness of Particle Board, mm b) Thickness of lamination, mm c) Moisture content, % <u>ALUMINUM Top Cap.</u> a) Thickness of powder Coating, micron.	
6	Ceramic Tiles/ Vetrified Tiles	Water absorption Crazing Test	One test for every 5000 nos. or part thereof

CONDITIONS FOR CHAIRS AND MODULAR FURNITURES

1. All quantities in the schedule are provisional. Payment will be made at the accepted rate for the material actually supplied and ascertained by actual measurements at site.
2. The RATE quoted by the contractor shall include all the materials, all lead and lifts, labour, equipment, all accessories including all taxes etc. needed for the job unless otherwise stated.
3. Before executing the supply order, the contractor is required to produce sample of all different items of Chairs and Modular Furniture to be provided for the above work for which they have quoted, without any additional cost, for Chief Engineer's approval.
4. In case of any dispute, the decision of Chief Engineer shall be final and the same shall be binding on the contractor.
5. During the execution of work, i.e. fabrication of Chairs and Modular Furniture items at Manufacturer's workshop wherever it is located, the Corporation's Engineer may visit and inspect the work at any point of time. The contractor shall arrange for such inspection and co-operate with the Corporation's Engineer.
6. All the Chairs and Modular Furniture supplied shall be got approved by LIC and the contractor shall replace the defective Chairs and Modular Furniture immediately.
7. The quantities shown in the schedule are provisional and are likely to increase or decrease. Some of the items may be omitted altogether. No claim whatsoever shall be entertained on this account.
8. The chairs and modular furniture to be manufactured and supplied by one of the registered manufactures with "**Business and Institutional Furniture Manufacturer's Association (BIFMA) India**" and having valid registration certificates. Before placing order for chairs and modular furniture, the contractor has to get approval of the manufacturer along with samples of the modular furniture & shop drawings of modular furniture and chairs from the Chief Engineer of LIC of India.
9. All Modular furniture and chairs shall display the "Logo" / "Monogram" of the Manufacturer /Supplier

SPECIFICATION FOR SUPPLY OF CHAIRS

1. The contractor shall inspect the site to ascertain the nature and scope of work.
 - a) The quantities given are provisional and likely to vary.
 - b) The guarantee period shall be **TWO YEARS** after the date of supply of chairs. Guarantee shall cover all parts except fabric. In case of defects during the guarantee period the defects shall be rectified free of cost. Guarantee shall be on stamp paper by the contractor and manufacturer jointly.
 - c) Welding done for stand and other parts shall be done by electric welding with approved welding rods of 12 gauges.
 - d) Unless otherwise mentioned, handles shall be one piece Injection moulded from black Co-polymer Polypropylene (PP handles).
 - e) **Foam:** Unless otherwise mentioned, chair cushion for seat shall be made up of High Resilience (HR) polyurethane foam moulded to have consistent density of around 45 ± 2 kg/m³ and hardness load 16 ± 2 kgf as per IS:7888 for 25% compression.
 - f) **Castor:** Heavy duty, non skid, twin wheel, injection moulded in Black Nylon.
 - g) **Revolving & Tilting:** Unless otherwise mentioned, Gas lift with 110mm adjustment of seat height along with a 360 degree swivel mechanism with tilting mechanism. The pneumatic operated mechanisms are mild steel powder coated with an additional M.S. galvanized rod.
 - h) PVC profile shall be provided by stapling for seat.
 - i) **Hardware:** All hardware should be of ISI quality.
 - j) **Upholstery:** The approved colour, texture, design and manufacturer of fabric shall be used.
 - k) **Stand:** Unless otherwise mentioned, stand shall be of 10 to 12 gauge M.S. sheet, properly welded with powder coating of minimum 50 microns.
 - l) **Adhesive:** Fevicol SR – 505, synthetic rubber adhesive shall be used for fixing of various items for chairs.
 - m) **Fabric:** Fabric shall be acrylic base for seat and mesh for back at a cost as mentioned in the schedule of Chairs. (purchase bill to be submitted)
 - n) 12 mm thick hot pressed ply shall be used for seat.
 - o) Pipes for S type/ C type chairs shall be M S ERW tube of dia 2.54 ± 0.03 cm x 0.2 ± 0.016 cm thick.
 - p) One sample of each chair shall be delivered after taking the acceptance letter.

Technical Specifications for factory made Modular Furniture

1. GENERAL:

The hardware shall be of approved manufacturer or supplier well made and equal to in every respect to the samples deposited with LIC Of India.

Screws shall match the finish of the article to be fixed and to be round or flat headed or counter sunk as required.

The contractor should cover up and protect all surfaces with suitable protective material, renew as necessary and subsequently clean off and clear away on completion.

Aluminum, CRC steel and stainless steel shall be of approved manufacture and suitable for its particular application. Generally the surface of Aluminum shall have an anodized finish and both shall comply with samples approved by the LIC Of India. The surface of A11, MS/CRC components shall undergo 7 stage pre- treatments.

All Steel, brass, bronze, Aluminum and stainless steel articles shall be subjected to a test for strength, if so required by the LIC of India.

The modular furniture shall be manufactured as per manufacturing process as per ISO Standards for repeatability.

2 The Work Station Components shall be of following Specifications.

Low height Partition Panels:

Height : 1200 mm approximately. Thickness :
65mm minimum(Overall)Finish: Part Laminate
and partly glass.

- Shall be tile partition system with provision for height enhancement.
- There shall be provision in the partition to allow for passage of wire throughout the length and height of the partitions and switches /sockets could be incorporated at any location within the panel. This is to allow separation of data and power cables by a minimum specified distance of 300 mm.
- Shall have 100% wire management through framework.

FRAME WORK:

- The framework shall be made from 16 gauge thick roll- framed MS sections for core frame & for intermediate members. The core frame consist of a welded rectangular frame made of vertical roll- framed sections (max spacing 150mm) welded to a horizontal sections to form a rigid structure with a hinged raceway at the base & above worktop level. The intermediate horizontal members shall fit into slots on the vertical members of the frame to accommodate the tiles of different sizes. The members shall have slots at regular interval. The slots should serve the double purpose of horizontal modularity as well as allowances for passing the cables throughout the height of partition. These slots shall be provided with plastic rings for a softer edge where wires are being passed.

- Pre-treatment: All MS and CRC components shall undergo 7 stage pre treatment.
- Powder Coating: Shall have Electrostatic powder painting with epoxy polyester powder having minimum thickness of 50 microns. Powder painted surface shall be free of blisters and should be tested for impact resistance, Hardness against scratch as per relevant IS standards.
- In Case of Aluminum framework, it shall be of minimum 2mm thick (14guage), duly powder coated as mentioned above.
- Stability: Stability of the partition shall be independent worktops, etc. cantilevered to it. A stable configuration shall be confirmed with layout. The partition configurations are to be free standing and not require any indentation to be done in the floor, walls or ceiling. The extruded frame should be sufficiently rigid such that worktops and other accessories can be cantilevered at any desired point without affecting the overall stability.
- The partition panes shall have levelers in the bottom with a allowance for adjustment of up to +/- 25mm.

End Trims / Top Cap/ Exposed Corners:

- End trims/ Top Cap/ Exposed Corners shall be of extruded sections of Aluminum (2.0mm thk) with epoxy powder coating finish of thickness not less than 50 microns. These shall be accurately fixed by means of hidden connections.

Intermediate Raceways / Bottom facias for Electrical Wiring & Wire Management:

- All partition panels shall be provided with hinge type bottom raceway (100 mm high) & intermediate raceway above work top level. The bottom raceway accessible from both side & intermediate raceway shall be accessible from inner side only. The cover plate shall be of 1mm th MS sheet duly powder coated of thickness not less than 50 microns. Necessary slots shall be provided on the facia / cover plate as per the sample provided for fixing switches. Provision shall be made for fixing the sockets on the inside of the frame with plastic snap off strips on the hinged raceways to allow wires to pass through. The ends of raceways shall be slotted for incoming & outgoing wires.

Facia Tiles/ Tile Panel:

Tiles shall be fixed flush to the partition.

a) Pre- laminated Tiles

- The laminated tiles shall be of 12mm th Pre-laminated particle board (interior grade) of approved shade, fitted with clips on rear side. The pre-laminated particle board shall be OSL of interior grade bonded with BWR grade phenol formaldehyde synthetic resin, confirming to IS:12823. The edges of the tiles shall be lipped with PVC edge lipping. All tiles should be gasketted to their frames to minimize sound and dust transmission.

b) Tackable tiles / Pinup board.

- The tackable, tile shall be made up of 0.6mm th **GI sheet** with an inlay of 6mm th crosslink foam having density of 50-60 Kg/m³. Fabric shall be with fire retardant coating and scotch guard for strain resistance, glued to the GI sheet.

c) Fabric finish panel/ Non tackable Tiles:

- The tackable tiles shall be made up of 0.6mm th **GI sheet** with an inlay of 8mm th poly urethane foam having density of 20 Kg/m³. Fabric shall be with fire retardant coating and scotch guard for strain resistance, glued to the GI sheet.

- d) M S Sheet
 - 16 gauge MS sheet with powder coated of minimum 50 micron tile to be fixed at below the table top at inner side of partition.
- e) Glass panel :
 - 4mm thick plain clear sheet glass fixed on both sides of partition at above of concealed raceway above work station table with sufficient members of clips, gasket etc complete.
- f) Edges :
 - All the edges shall be finished with hot pressed PVC lipping of matching shade.

Work Top

- Work top shall be of 25mm thick pre laminated particle board interior grade confirming to IS: The front edge in half round mould (post formed section). Bottom shall have baker lamination of 0.6mm thickness.
- Non Working edges of the work surface shall be provided with machine pressed 2mm thick PVC lipping.
- Work tops shall be mounted onto the partition panels for workstations by means of cantilever brackets made from minimum 18 gauge CRCA steel duly powder coated or by powder coated MS brackets or by any other means as per manufacturer's specifications. The worktops shall be sufficiently supported / reinforced to take weight of computers, printers, person etc...
- Work surfaces shall be provided with circular cut outs as per the requirement. These cutouts shall be provided with ABS covers
- Vertical supports shall be gable end finished same as tops in post formed laminations particle board.

Key board pullout tray:

- Key board shall be made from 1.2 mm thick CRCA steel duly powder coated as per approved sample. The dimensions shall be as per specifications/ drawing.
- It shall be mounted on MS powder coated telescopic channels for noiseless and smooth sliding.

Pedestal Drawer Unit:

- The carcass shall be made from 0.8 mm thick Galvanized MS sheet & drawers shall be made from 0.6 mm thick Galvanized MS sheet duly powder coated. The drawer unit shall have two drawers at top & one filing drawer.
- Pre treatment: All MS components shall undergo 7 stage pre- treatment & powder coating.
- Drawers shall be mounted on GI telescopic channels for noiseless and smooth sliding.
- Shall be provided with anti tilt mechanism with the help of counter weight to avoid the unit from tilting when drawers are in use.
- Shall be provided with master key/ lock with minimum 2 set of keys.
- Shall be stationary and necessary rubber bushing at bottom/ glide screws with height adjustment upto +/- 10 mm.
- On completion of the project, the contractors shall have to hand over all the keys with individual key chain bearing respective key number and work stations number.

CPU shelf:

- Movable type MS powder coated adjustable CPU trolley of size as specified in drawing for placing any size of CPU unit, made out of 16 swg powder coated MS sheet with 4 nos lockable type castors etc... complete.

Power Strips:

- Cutouts shall be provided for electrical sockets above/below table tops as per drawings.

connectors:

- Aluminum / CRCA steel/ MS connectors shall be supplied along with the frame.

3 FREESTANDING TABLES:

- The various components of freestanding table shall be connected with concealed type knockout fittings suitable for particleboards.

TOP:

- Tops shall be of 25mm thick plain particle board interior grade confirming to IS. in one piece with Front Edge with PVC flat lipping including MS Powder Coated Brackets to Fix With Gable Ends. Bottom shall have a baker lamination of 0.6mm thickness. Nonworking edges of the work surface shall be provided with machine pressed 2 mm thick PVC lipping.

Gable End:

- Shall be made out of 25mm thick plain particle board interior grade confirming to IS. All edges shall have 2mm th PVC lipping, with leveling bolts. The gable end shall have in the bottom with a allowance for adjustment of upto +/- 25 mm.

Modesty Panel:

- Modesty panel /Apron shall be made out of 18mm thick particle board in one piece interior grade confirming to IS. The Particle board shall be laminated with laminate of 0.8 mm thickness of approved shade. The edges shall have 2mm thick Hot Pressed PVC lipping of Matching Color.

4 Side Credenza.

The various components of side credenza shall be connected with

Top:

- Tops shall be provided with 25mm thick pre laminated post formed particle board moulding at front edge, all other three edges shall be with 2mm PVC flat lipping.

Carcass:

- The carcass & one shelf at middle shall be of 24 gauge MS sheet treated with 7 tank galvanised process and finished with powder coating of approved shade & thickness of 50 microns.

Shutter:

- The sliding shutters shall be made up of 24 gauge MS sheet treated with 7 tank galvanised process and finished with powder coating of approved shade & thickness of 50 microns. sliding channel with double ball bearing for smooth operation.

Locks/ Hardware:

- The door shall be provided with handle and 2 way locking system with duplicate keys of non corrodible material. Door handle and lock shall be of approved make.

5 Low height storages.

Same as per side credenza as above but with openable shutters

6 Notes;

- Wherever laminate, fabric, powder coated metal sections are mounted it shall be of approved shade and make.
- The physical parameters and the functional requirements are indicated in the drawings.
- In each wing there are different combinations of partition to any desired configurations such as straight T,L,U,C,+ etc. The tender is instructed to carefully go through the layouts and provide the same.
- Minor layout modifications if required should be allowed at no additional cost, after placement of order. The contractor shall furnish shop drawings for the entire scope including sample to be used for various material within seven days of the receipt of instruction.
- Dimensional accuracy and discrepancy in the fit out of the work station shall be highlighted immediately.
- The contractor shall make necessary arrangement and erect Mockup Configuration for at least two alternatives at site at his own cost. Same shall be dismantled on receiving of instruction.
- Necessary As built drawing shall be furnished indicating workstation with its designated number.
- Necessary list shall be furnished in a tabular form indicating workstation numbers with respective key Nos.
- All the workstations should have provision for fixing master switch and one socket for telephone line on top of table for control of switches provided below table top.
- **All Furniture including pedestal drawer units shall display the "LOGO"/MONOGRAM of the manufacturer.**
- **All post formed laminate wherever mentioned in the tender shall be of 0.8 mm thickness.**
- **All Particle boards/pre laminated particle boards wherever mentioned in the tender shall be of INTERIOR GRADE of approved make.**



TECHANICAL SPECIFICATIONS

Fire Alarm and Detection System

The scope of the work covers supply of materials, installation, testing and commissioning of Fire Detection & Alarm systems.

Copies of drawings of buildings and schedule of quantities are enclosed in the tender document. All the equipment and installation shall conform to specifications contained in Indian Standards.

The installation of the systems shall conform to norms as per NBC 2016 - Part 4, IS 3844. The installation of Fire Detection & Alarm system shall comply with the latest edition of relevant NFPA 72 E and IS: 2189 standards. The scope of work also includes preparation and submission of drawings for obtaining approvals (NOC) for the system from local authorities like State Fire Dept. and liaison works with the departments if required. All incidental expenses in connection with the same shall be borne by the contractor. For all approvals / NOC if required , statutory fees shall be remitted by the contractor initially. However, it shall be reimbursed on submission of original receipt.

FIRE ALARM SYSTEM

Manual Call Points (MCPs)

It shall be of 'break glass' type, and 1.5mm thick welded sheet steel or 3 mm thick cast ALUMINUM. The front glass shall be breakable. The MCPs shall be recess mounted suitable to support the fire panel. It shall form an integral part of the fire detector system. The housing shall be dust/vermin proof properly sealed with rubber lining. The glass frangible element shall keep a push button pressed inside such that in the event of breaking the glass, the push button is released to actuate an alarm in the control panel.

Where sheet steel is used for, this shall be thoroughly cleaned off dust, dirt, grease and rust if any and two coats of anti rust primer shall be given both inside and outside. This shall be followed by two coats of synthetic enamel paint in fire red colour on the external surface that will be visible on installation. In the case of cast ALUMINUM body for a call box, the surface shall be neatly finished with red colour paint. The following words shall be painted on the front of the call box in contrasting colour with a letter size of not less than 5mm.

"BREAK GLASS IN CASE OF FIRE"

Installation requirements:-

Manual call points shall be located at exit space and shall be installed at a height of 1.4 m above the floor at an easily accessible position. They shall be installed at easily accessible, well illuminated positions, preferably in a contrasting background so that they are easily noticeable from either direction. They may be semi-recessed so as to project by 10mm. They shall be installed free from obstructions.

2. Hooters

The loop hooters shall be so arranged that when any alarm operates all the hooters throughout the premises shall be activated. The hooters at the fire alarm shall be electronic type having frequency of suitable frequency range. The hooters shall be capable to produce a sound output of 90 db at 1 m. Hooters shall be of loop powered and no separate power is required.

Fire alarm hooters shall not be used for any purpose other than for fire operations. When installed flush with a false ceiling these shall match the ceiling surface. Necessary provisions such as metal/ wooden boxing or frame work, if required, to accommodate the hooters shall be provided in the ceiling. It shall be installed at a height not lower than 2.4 m, except when recessed in a false ceiling of lower height, in such cases the hooters shall be recessed at false ceiling level.

The panel hooters in the respective panels shall be actuated automatically as soon as fire alarm signal is initiated from any trigger device connected to them. These shall also be sounded when there is a fault alarm signal within their areas of control. The sound shall be continuous and of the same characteristics from all fire alarm hooters in a building.

The isolator module shall mount in a standard suitable size electrical box or in a surface mounted back box. It shall provide a single LED that shall flash to indicate that the isolator is operational and shall illuminate steadily to indicate that a short circuit condition has been detected and isolated.

3. Fire Alarm Control Panel

The fire alarm control panel shall be designed to give reliable and continuous operation for long time with several advantages features. The panel shall be conventional type suitable for 2 wire loops system. Being modular in design, it shall be very easy for maintenance and testing of the system. Fire Alarm panel consists of following plug in type modules

- i. Power module.
- ii. Charger module.
- iii. Control module.
- iv. Loop modules.



The fire alarm control panel shall be housed in a steel enclosure. It shall also be finished with hard wear textured epoxy paint/ powder coated. Cable entries shall be provided on the top and bottom of the panel.

The system capacity shall be based on the number of devices and control modules. Each devices in the system shall be identified by its unique address position on the two wire loop. The panel retains command over the alarm process, LED indicators, automatic test feature and loop hooters.

a. Basic system Functional Operations

When a fire alarm/trouble condition is detected and reported by one of the system initiating devices or appliances, the following functions shall immediately occur:

- ✓ The system Alarm LED of respective zone shall flash or the system trouble LED shall flash.
- ✓ A local piezo-electric signal in the control panel shall sound.
- ✓ The LCD display shall indicate all information associated with the fire alarm/trouble condition, including the zone in which the fire/fault has occurred.

b. Enclosures

The control panels shall be housed in cabinets suitable for surface or semi-flush mounting. Cabinets shall be corrosion protected, given a rust-resistant prime coat, and manufacturer's standard finish.

The back box and door shall be constructed of min. 16 gauge sheet steel with provisions for electrical conduit connections into the sides and top. The door shall provide a key lock and include a transparent opening for viewing all indicators. For convenience, the door shall have the ability to be hinged on either the right or left-hand side.

The control unit shall be modular in structure for ease of installation, maintenance, and future expansion.

c. Power supply

The power supply units shall operate on 240 Volts AC, 50Hz, and shall provide all necessary power for the smooth operation of system. In case of failure of main power supply the power supply unit shall draw power from a set of standby batteries. The capacity of the battery set shall be sufficient to meet the required hours full functioning of the complete system under alarm conditions. It shall provide a battery charger using dual-rate-charging techniques for fast battery recharge. It shall charge completely discharged batteries within a 12-hour period.

d. Batteries and External Charger

Battery

Battery shall have sufficient capacity to power the fire alarm system for not less than two hours in alarm condition and at least 8 hours in normal condition. The batteries are to be completely maintenance free.

Battery Charger

Shall be completely automatic, with constant potential charger maintaining the battery fully charged under all service conditions. Charger shall operate from a 230 volt 50 hertz source. It shall be rated for fully charging a completely discharged battery within 12 hours while simultaneously supplying any loads connected to the battery. It shall have protection to prevent discharge through the charger. It shall also have protection for overloads and short circuits on both AC and DC sides.

4. Control Cable

The control cable for wiring fire alarm system shall be 2 x 1.5 sq.mm PVC Copper armoured cable. Cables shall be laid as per relevant installation standards. The size of these cables are specified in schedule of requirements.

5. Conventional Detectors

All types of detectors shall be of optical type. The detector shall have no moving parts or components subject to wear. It shall be possible to test the detector in the field. The response of a detector shall always be clearly visible from outside by a flashing light on the base. The detector shall connect to the control unit via a fully supervised two-wire circuit. A built barrier shall prevent entry of insects into the sensor. The detector shall be designed for fast and simple cleaning. All electronic circuits must be solid state devices and virtually hermetically sealed to prevent their operation from being impaired by dust dirt or humidity. All circuitry must be protected against usual electrical transients and electromagnetic interference. All radioactive parts of the source, if any, shall be fully gold plated. The detector shall be inserted into or removed from the base by a simple push-twist mechanism to facilitate easy exchange for cleaning and maintenance.

The smoke & heat detectors shall fit into a common type standard base. The standard base shall be supplied with a seal plate, preventing dirt, dust, condensation or water reaching the wire terminals or the detector points. Detectors shall be provided with a MS box for entry and termination of armoured cable and to protect detectors terminals.

At the time of installation and prior to commissioning, every detector shall be allotted an identification number. Detectors shall not be either partially or totally recessed in ceiling or wall. Detectors shall be suitably protected where they are liable to be subjected to mechanical damage. Detectors shall not be painted or coated or covered in any manner after installation as this will adversely affect the sensitive of operation.

Smoke detectors

It shall be of optical type. Smoke detectors shall quickly respond to smoke containing small particles normally produced and automatically adjusts sensitivity without needing operator intervention.

GENERAL CONDITIONS FOR MAINTENANCE OF FIRE ALARM AND DETECTION SYSTEMS DURING DEFECT LIABILITY PERIOD

- i. Quarterly checking up keeping and replacement of the any component or sub-components of the system for proper operation of the system.
- ii. During the Defect liability period, the contractor will responsible to keep the Fire Alarm system in perfect running condition including fitting of parts accessories, repair etc,
- iii. In case of any defect cropped up, it shall be attended within 04 hours of getting information over telephone/ email as and when is required.
- iv. The contractor has to give proper authorization of engineer / supervisor responsible for maintenance of units and has to provide their contact number so that we can contact them as and when required.
- v. In case the services rendered by the contractor are not found satisfactory, during any time of defect liability period, LIC will engage some other agency to carry out the work at contractors' risk & cost and the amount spend shall be recovered from Security Deposit.
- vi. Safety controls should be tested and replaces in case of malfunctioning.
- vii. Arranging demonstration / testing at least once in every three month.
- viii. Any defect in electrical items and control wiring of fire ALARM systems should be attended.
- ix. The replacement of all the parts if any should be original, genuine make and old replaced should be shown or handed over to LIC Maintenance Engineer-in-charge. The material whichever needs to replace, should take prior approval from the Competent Authority.
- x. Ensuring proper working entire Fire Alarm AND DETECTION systems.

GENERAL CONDITIONS FOR MAINTENANCE OF APFC PANEL DURING DEFECT LIABILITY PERIOD

- i. Quarterly checking up keeping and replacement of the any components of the system for proper operation of the APFC panel.
- ii. During the Defect liability period, the contractor will be responsible to keep power factor (lagging) not below 0.95
- iii. In case of any defect cropped up, it shall be attended within 04 hours of getting information over telephone/ email as and when is required.
- iv. The contractor has to give proper authorization of engineer / supervisor responsible for maintenance of units and has to provide their contact number so that we can contact them as and when required.
- v. In case the services rendered by the contractor are not found satisfactory, during any time of defect liability period, LIC will engage some other agency to carry out the work at contractors' risk & cost and the amount spent shall be recovered from Security Deposit.
- vi. Safety controls should be tested and replaced in case of malfunctioning.
- viii. Any defect in electrical items (Like APFC relay, capacitors , contactors) and control wiring of APFC Panel should be attended and replaced the same if required during DLP.
- ix. If any penalty imposed in lieu of power factor by Electricity Authority , the same shall be deducted from security deposit.
- x. The contractor shall regularly visit the site and inspect the APFC panel for cleaning , checking contactors, APFC relay, capacitors etc so as to ensure required power factor.
- xi. The said work is comprehensive in nature and nothing extra for any parts , services etc shall be paid on any account in DLP.

GENERAL PREAMBLES TO SCHEDULE OF QUANTITIES

These preambles apply to all the sections of the "Schedule of Quantities".

1. RATE COVER:

The Item rate quoted by the Contractor shall be held to include for providing and fixing, all conveyance and delivery, loading & unloading, carrying in, storing, hoisting, all labour, setting, fitting and fixing in position, making straight, cutting, waste, return of packing and all materials and labour and everything else necessary for the proper completion of each item of work to the approval of Corporation's Engineer and for Establishment Charges, overheads and profits. The Contractor shall provide at his expense all labour, materials and things required by the Corporation's Engineer for testing and measuring the work, for weighing, testing the efficiency of any portion of the work, all planking, gangways etc. necessary for affording access to every part of the work except where specifically stated otherwise.

The Contractor should also cover in his rates for the method of work, cost of materials, labour etc., to comply with the "Trade Specifications", General Instructions to Contractor", "Conditions of Contract", "Special Conditions", (if any), and all documents of this contract.

All the materials or procedures or specifications for work, unless otherwise stated, shall conform to the current Indian Standard whether or not specific mention is made thereof. The Contractor shall be responsible for and shall replace or make good at his own expense, any materials lost or damaged, or of quality not approved, temporarily disturbed roads, pavements, approaches, gates, walls or any such dismantling carried out to execute the work.

All rates quoted shall include for Supplying and fixing although the same may not have been mentioned in the item of the Schedule of Quantities. Words "Providing and Fixing where used shall have same meaning as "Supplying and Fixing".

Rates quoted shall include for hoisting to any height, and the work at all levels and lifts of materials shall not form any criterion for any extra claims, except where otherwise specified.

2. ANCILLARY WORKS:

The Contractor shall have to carry out all ancillary and connected work within and near vicinity of the plot of the proposed work and inside the Building if ordered to do so by the Chief Engineer at the rates quoted in the Schedule of Quantities, at any time during the currency of this Contract including extension of time, if any granted.

3. PRICE FLUCTUATION / VARIATION:

PERCENTAGE RATE quoted by the Contractor shall be firm throughout the currency of the Contract including extensions of time, if any granted. No price adjustment due to variation in cost of materials or labour or any variation under any State or Central Legislation or any other reason whatsoever shall be allowed, except as stated in relevant clauses below with regard to variation in price on materials & labour and price fluctuation in Cement & Steel.

4. TESTING OF MATERIALS:

Testing of all materials during the progress of work shall be as per frequency given in Table A. Contractor shall facilitate testing of materials as per the frequency / sampling mentioned in the table A. Contractor shall also facilitate testing of any material to be incorporated in work even if it is not specifically mentioned. The testing charge against invoice shall be directly remitted by the corporation to the test house. If the material/s fails to conform to the standards, the test charges shall be recovered from Contractor's bill.

For all other materials listed in special conditions, expenses towards testing shall be borne by LIC. If the material/s fails to conform to the standards, the test charges shall be recovered from contractor's bill.

The Corporation's engineer may get tested any material to be incorporated in work even if it is not specifically mentioned. In all such cases, testing charges will be borne by LIC. If the material /s fails to conform to the standards, the test charges shall be recovered from contractor's bill.

For all tests incidental charges such as cutting, loading, unloading, casting wherever Applicable such as mortar briquettes / cubes and facilitating in transportation, shall be borne by contractor.

5. "PRINCIPAL MAKE/S OR OTHER EQUAL AND APPROVED" FOR MATERIALS / PRODUCTS:

The Contractor shall note that materials having "ISI" monogram shall primarily be used in the work. If in the tender "Certain Principal Make / Makes or other equal and approved of any material / Product is mentioned in any item or Trade Preambles relating to the particular items in its respective Trade Schedule, the Contractor shall have to use the Principal Make/Makes specified in the relevant item or in the list of Principal Makes/Agencies/Brands of various materials. In case the specified particular Principal make / makes of the material/product is/are not readily available, the Contractor shall take prior permission and approval of the Chief Engineer in writing before use of the alternative equivalent make of the Material/Product.

All principal makes specified for any item shall be treated at par as per the accepted quoted rate.

Use of the make other than the Principal Make/Makes (which shall be treated as an Equivalent make) shall be at the discretion of the Chief Engineer and such Make/Makes shall be used after the approval of the Chief Engineer. In such cases the Contractor will not be paid any extra payment over the accepted quoted **RATE** in any case. However if it is ascertained that the price of approved Equivalent Make or the Material/product is lower than that for the Principal Make/Makes of the same material/product the difference of the price shall be payable by the contractor to LIC. Such difference of price shall be suitably decided by the Chief Engineer whose decision shall be final and binding to the Contractor in this regard.

ANNEXURE-M

MEASUREMENT OF WORK

All items having a financial value shall be entered in the Measurement book. All measurements and levels shall be taken jointly by the Site Engineer or his authorised representative and by the contractor or his authorised representative from time to time during the progress of the work and such measurements shall be signed and dated by both the parties in token of their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to the effect with reason, signed by both parties and referred to EE whose decision in the matter shall be final and binding. Measurements can also be recorded through electronic medium where specifically approved by Chief Engineer.

Annexure M1

Name of the Work:

Abstract Bill No:

Tender Item No.	Tender Qty	Brief Description	Quantity			Unit	Rate	Amount (Rs)
			Last Bill	This Bill	Actual Total			
1								
2								
3								

Deviated items

Net value after rebate:

Value of Extra items

Total value of work done:

Advance for material at site

Any miscellaneous reimbursement charges

Devaluation if any.....

Total value of work done Rs.....

Deductions

IT on value of work done

WCT@...% on value of work done

Cement consumed in the work RMD

/ EDM

Recovery of any other material if any

Recovery of electricity

Recovery of water

Recovery of Insurance lapses & liquidity damages

Amount release in earlier bills

.....

Total recoveries

.....

Net Amount Payable Rs.

LIST OF PRINCIPAL MAKES/ AGENCIES/ BRANDS OF VARIOUS MATERIALS

- (a) Materials used in the work should be from the following list of principal makes/ brands. In case of non-availability of these makes/brands, Chief Engineer shall allow materials licensed by BIS bearing "ISI" monogram at par with principal makes.
- (b) For all other manufactured materials for which principal makes are not mentioned the materials allowed to be used in the work shall have BIS certification and samples for which are to be got approved prior to use of the same in the work.
- (c) For some materials BIS certification may not be available. In such cases the samples shall have to be got approved before using in the work.

Sl No	MAKES/AGENCIES/BRANDS	SL NO	MAKES/AGENCIES/BRANDS
1.	GI PIPES	2	GI PIPE FITTINGS
	a. Jindal		a. R-Brand
	b. Zenith		b. K.S Brand
	c. Apollo		c. Zoloto
	d. GST		d. RR
	e. Prakash		e. SSS
	f. QST		f. NMC
3.	COPPER PIPES/TUBES	4.	MULTI LAYER COMPOSITE PIPES
	a. Rajco Metal Industries		a. Kitech
	b. B.P. Conex		B Kisan
	c. Comap		c. Flowguard CPVC Astral
5.	PVC PIPES AND FITTINGS	6.	UPVC (UNPLASTICIZED PIPES & FITTINGS)
	a. Chemplast		a. Prince
	b. Prince		b. Supreme
	c. Supreme		c. Paras
	d. Finolex		
	e. Oriplast		
7.	GATE VALVES, GLOBE VALVES	8.	FOOT VALVES, CHECK VALVES
	a. Leader		a. Leader
	b. Kirloskar		b. Kirloskar
	c. Zoloto		c. Ashoka
	d. Orient		
9.	WATER METERS	10.	FERRULES
	a. Capstan		a. Leader
	b. Anadaasahi		b. Hindco
	c. Dasmesh		c. Neta
	d. Remco		d. Annapurna
11	BIBCOCKS, STOP COCKS, PILLAR TAPS ETC.	12.	LOW LEVEL FLUSHING CISTERNS (PVC/CERAMIC)
	a. Jaguar(Continental Series)		a. Parryware
	b. Marc(Oriental Series)		b. Cera
	c. Essco		c. Hindware
	d. ARK		d. Commandor
	e. GEM		

13.	VITREOUS SANITARYWARE LIKE IWC, WASHBASIN, URINALS EWC ETC	14.	PLASTIC SEAT AND COVER
	a. Parryware		a. Commander
	b. Cera		b. Parryware
	c. Hindware		c. Bestolite
	d. Neycer		d. Duroshine
15.	BATH ROOM FITTINGS	16.	CI PIPES & FITTINGS
	a. Jaguar(Continental Series)		a. Hind
	b. ESSCO		b. BIS
	c. Gem		c. BIC
	d. ARK		d. Neco
	e. Mark(Oriental Series)		
17.	CINAHANI TRAP	18.	SW PIPE
	a. BIC		a. HIND
	b. SKF		b. PERFECT
	C.NECO		C. BURNS
	d. RAJCO		
19.	PVC CABINET MIRROR	20.	SLUICE VALVE
	a. Commander		a. Leader
			b. Kirloskar
21.	HDPE/LDPE/LLDPE WATER STORAGE TANKS	22.	CERAMIC/GLAZED TILES
	a. Sintex		a. Nitco
	b. Plycon		b. Kajaria
	c. G&P		c. Euro
			d. H.R.Jhonson
			e. Somany
			f. Orient Bell Ltd.
23.	VITRIFIED TILES	24.	PLY WOOD(BWR), BLOCK BOARD
	a. Nitco		a. Kitply
	b. Kajaria		b. Archid Ply
	c. RAK		c. Green Ply
	d. EURO		d. Century Ply
	e. SOMANY		e. Bhutan Board
	f. Orient Bell Ltd.		f. Sharon
			g. Anchor
			h. Swastik
			i. National
			k. Samrat Plywood Ltd.
25.	FLOAT GLASS	26.	PVC DOORS & DOOR FRAMES
	a. Saint Gobin		a. Rajshri
	b. Modi Guard		b. Sintex
	c. Triveni Sheet Glass		c. Supreme
	d. Indo Asahi Glass Co		
	g. Tata		
	h. Atul		

27.	ALUMINUM EXTRUDED SECTIONS	28.	STAINLESS STEEL KITCHEN SINKS
	a. Hindal		a. Nirali
	b. Jindal		b. Frankee
	c. Indal		c. Jayna
	d. hindalco		d. Diamond
			e. Neelkanth
29.	PRE-LAMINATED/ VENEERED PARTICLE BOARD	30.	FLUSH DOOR SHUTTERS
	a. Novopan		a. Kutty Flush Doors
	b. Green Lam		b. Century
	c. Kitlam		c. Green Ply
	d. Archid lam		d. Shiva Hari Ply Wood Ltd(Corbett)
	e. Swastik		e. Anchor Ply
			f. Swastik Ply
			g. Western India
			h. Parvathi Wood
			i. Archid
			k. Samarat Plywood Ltd.
31	DECORATIVE LAMINATES	32.	FLOOR SPRINGS
	a. Green Lam		a. Everite
	b. Merino		b. Hardwyn
	c. Sunmica/Formica		c. Efficient Gadgets
	d. Century		d. Garness
	e. Durian		e. Dormer
	f. Sundek		
	g. Anchor		
	h. Decolam		
	i. Archid		
	K. Samrat Plywood Ltd.		
33.	VENEERS	34.	MDF BOARDS
	a. Decowood		a. Duratuff
	b. Euro Veneers		b. Nuwud
	c. Durion		c. Century
	d. Green Lam		d. Novopan
	e. Archid		e. Kitply
			f. Green Ply
35.	ADHESIVES	36.	WOOD PRESERVATIVES
	a. Fevicol-SH		a. Bison
	b. Araldite		b. Godrej
	c. Ciba Giegy		c. Kot
	d. Mowiool-HV of Mafatlal		
37.	HARDWARE FITTINGS	38.	DOOR CLOSERS
	a. Jyoti		a. Everite
	b. Argent		b. hardwyn
	c. C.I.E.F		c. Efficient Gadgets
	d. Classic		d. Ebco
	e. Everite		e. Dorma
	f. Metaco India		f. Garness
	g. JH Alumium		

	h. PV Radhakrishna		
	i. Etalia		
	j. Hardwin		
39.	DRAWER SLIDERS	40.	LOCKS
	a. Efficient Gadgets		a. Godrej
	b. EBCO		b. Golden
	c. Etahoa		c. Efficient Gadgets
	d. Sisco		d. Mark
			e. Sheel
			f. Vision
			g. Dorma
41	MIRRORS	42	WATER PROOFING COMPOUND
	a. Atul		a. Impermo
	b. Sun		b. Cico
	c. Commander		c. Pidilite
	d. Modi Guard		d. Roff
	e. Saint Gobin		e. Choksey
	f. Globe		f. Hindusthan-ciba-Gaigey
			g. Accoproof
			h. Sika
			i. Fosroc.
43	STEEL WINDOWS AND VENTILATORS	44.	AC PIPES/ SHEETS
	a. Agew Steel Mfg. Co. Ltd.		a. Charminar
	b. Sen Harvic		b. Everest
	c. Hopes		c. Visakha
	d. Diana Casements		d. Orient
	e. Madhu Industries, Bangalore		e. Ramson
	f. Multi Unique Metal Windows		
	g. Ankur Industries		
	h. Modern Fabricators		
45	SPECIAL PROTECTIVE DECORATIVE FINISH	46	OIL BOUND DISTEMPER
	a. Snowcem paints		a. Asian
	b. Asian Paints		b. Berger
	c. Berger		c. Jenson & Nicholson
	d. Jenson & Nicholson		d. ICI
	e. Kansai- Nerolac		e. Kansai- Nerolac
	f. ICI		f. Godawari
	g. Godawari		
47.	CEMENT PAINT	48.	SURFACE TEXTURE
	a. Snowcem Plus		a. Heritage (Bakalite Hylam Ltd)
	b. Berger		b. Spectrum
	c. Asian		
	d. Jenson & Nicholson		
	e. Kansai- Nerolac		
	f. ICI		
	g. Godawari		

49.	TEXTURED PAINT	50.	ENAMEL PAINT/ PRIMERS/ READY MIXED PUTTY FOR WOOD WORK,IRON & STEEL
	a. Snowcem India Ltd-Santexx Matt		a. Asian
	b. Asian		b. Berger
	c. Jenson & Nicholson		c. Jenson & Nicholson
	d. Berger		d. Kansai- Nerolac
	e. Kansai-Nerolac		e. ICI
			f. MRF
51	WALL PUTTY	52	EXTERIOR EMULSION
	a.Birla Wall Care		a. Asian Paints- Apex
	b. Snowcem Paints		b. Berger Paints
	c. JK		c. Kansai- Nerolac
	d. Asian Paints		d. MRF
			e. Jenson & Nicholson
			f. ICI
			g. Godavari
53.	CEMENT CONCRETE PIPES	54.	EXPANSION JOINT BOARD
	a. The Indian Hume Pipe		a. Shalimar Tar Products
	b. Premier pre-stressed Co		b. Lloyds Insulations
			c. Fosroc
			d. Shalitex
55.	FALSE CEILING	56.	VERTICAL BLINDS
	a. India Gypsum		a. Vista levlor
	b. Armstrong		b. TRAC
	c. Daikin		c. MAC
	d. Insula		d. Marvel
	e. QED Panels		
57.	ADHESIVE FOR TILE FIXING	58.	PAVING TILES
	a. Roffe		a. Eurocon
	b. Bal Endura		b. Ultra
	c. Cera Bond		c. Duracrete
	d. FOSROC		
	e. Choskey Chemicals		
	f. Dr. Fixit		
	h. Sunanda		
59.	PVC FLOORING	60.	VINYL FLEXIBLE FLOORING
	a. Flora		a. Wonder Floor
	b. Armstrong		b. Armstrong
			c. BHOR
			d. Rikvin
			e. Tusker
61.	FIBRE GLASS DOORS	62.	SS/CP FRICTION HINGES
	a. Master Craft		a. Ebco
			b. Jyoti
			c. Everest
			d. Magnum
63.	SOFT BOARD	64.	SCREW
	a. Jolly board		a. Nettelefold
			b. GKW
65.	FIBRE REINFORCED COMP.DOOR		
	a. Loknath Unique		

APPROVED MAKES OF MATERIALS FOR ELECTRICAL, FIRE ALARM & STRUCTURAL CABLING WORK

SI No	MAKES/AGENCIES/BRANDS	SL NO	MAKES/AGENCIES/BRANDS
1.	COPPER CONDUCTOR PVC INSULATED FR GRADE WIRES	2	PVC INSULATED ARMoured CABLES(LT/HT)
	a. Finolex		a. Finolex
	b. havells		b. Fort Gloster
	c. V Guard		c. CCI
	d. RR Kable		d. RR Kable
	e. K E I		e. Delton
			f.K E I, g. Havells
3.	MAIN SWITCH WITH HRC FUSES	4.	MAIN SWITCHES WITH REWIRABLE FUSE
	a. L&T		a. L&T
	b. Siemens		b. Crompton
	c. GE		c. Standard
	d. English Electric		d. havells
	e. Standard		
	f. Havells		
5.	MCCB	6.	MCB/ELCB/ELMCB/DB
	a. Siemens		a. Legrand
	b. L&T		b. Siemens
	c. SchniederMJ		c. Hagger
	d. Legrand, e. Havells		d. Schneider MJ, e. Havells
7.	CHANGEOVER SWITCH/ SWITCH FUSE UNIT UPO 100 AMP	8.	CHANGE OVER SWITCH/ SWITCH FUSE UNIT ABOVE 100 AMP
	a. HPL		a. HPL
	b. L&T		b. L&T
	c. Havells		c. Siemens
	d. Standard		
	e. Siemens		
9.	RISING MAINS	10.	PVC CONDUIT(ISI MARK)
	a. English Electric		a. Precision
	b. GEC		b. Avon Plast
	c. Schnieder		c. Essarke
			d. Sudhakar
			e. Kalinga
			f. AKG
11.	PVC CASING CAPING	12.	MS CONDUIT
	a. Precision		a. Supreme
	b. Diamond		b. BEC
	c. Sudhakar		c. NIC
	d. Kalinga		d. AKG
	e. AKG		

13.	FLOOR TRUNKING SYSTEM	14.	GI PIPE
	a. Legrand		a. Jindal
	b. MK Electric		b. Senith
	c. Precision		c. Prakash
	d. Modi		d. Tata
			e. GST
			f. Apollo
15.	MODULAR SWITCHES, ACCESSORIES & ELECTRONIC REGULATOR	16.	NON MODULAR SWITCHES, ACCESSORIES & ELECTRONIC REGULATOR
	a. Anchor Roma		a. Anchor
	b. SSK		b. Leader
	c. Leader		c. SSK
	d. Crabtree		d. SPL
	e. MK		
	f.L & T, g. Havells		
17.	INDUSTRIAL PLUG & SOCKET	18.	CEILING/EXHAUST/WALL FAN
	a. Legrand		a. Usha
	b. havells		b. Crompton
	c. Crompton		c. Orient
	d. Hagger		d. Bajaj
	e. Standard		e. Almonard, f. Havells
19.	INDOOR LIGHT FITTINGS	20.	OUT DOOR LIGHT FITTINGS
	a. Philips		a. Philips
	b. Wipro		b. Wipro
	c. Crompton		c. Crompton
	d. GE		d. GE
	e. Havells		e. K-Lite, f. Havells
21.	CABLE GLANDS	22.	LUGS
	a. Comet		a. Dowells
	b. Dowells		b. Comet
	c. Braco		
	d. Siemens		
23.	CONNECTORS	24.	FLUORESCENT LAMP
	a. Elmex		a. Philips
	b. Connect Well		b. Osram
	c. Phonex		c. Crompton
			d. Bajaj
			e. GEC
25.	COMPACT FLUORESCENT LAMP	26.	MOTOR STARTER
	a. Philips		a. Siemens
	b. Osram		b. L&T
	c. Havells		c. Crompton
	d. Wipro		
27.	MONOBLOCK PUMP	28.	LIGHTENING ARRESTOR
	a. Kirloskar		a. Pactil
	b. Crompton		b. Heco
	c. CRI		c. Atlas
			d. GK Electricals
29.	TRANSFORMER UPTO 500 KVA	30.	TRANSFORMER ABOVE 500 KVA
	a. Pactil		a. Kirloskar
	b. Emco		b. GEC

	c. Crompton		
	d. Kirloskar		
	e. GEC		
	F. Tesla		
31.	A.B. SWITCH & D.O FUSE	32.	SELECTOR SWITCH
	a. Pactil		a. Kaycee
	b. Jenco		b. Siemens
	c. Crompton		c. C&S
	d. Atlas		
33.	INDICATING LAMPS	34.	CONTACTORS
	a. Vaishno		a. Siemens
	b. Essen		b. L&T
	c. Philips		c. ABB
			d. Schnieder
35	PF IMPROVEMENT CAPACITORS & APFC PANEL	36.	RELAY FOR AUTOMATIC PF IMPROVEMENT
	a. Epcos		a. Epcos
	b. Neptune		b. Conzerve
	c. L&T		c. L&T
	d. Crompton, e. Havells		
37.	CURRENT TRANSFORMER	38.	DATA CABLES & FACTORY MADE PATCH CHORDS
	a. AE		a. Legrand
	b. Rishabh		b. D Link
	c. Kuppa		c. Finolex
	d. L&T		d. Molex
			e. AMP
39.	INFORMATION OUTLET/RJ 45 CONNECTORS/RJ-11 SOCKETS	40.	TELEPHONE WIRES
	a. D Link		a. Finolex
	b. Legrand		b. Delton
	c. Molex		c. Havells
	d. Systemax		d. RR Kable
	e. AMP		
41.	RJ 6 Cable for TV	42.	JACK PANEL
	a. Finolex		a. D Link
	b. Delton		b. Legrand
	c. National		c. Molex
			d. Systemax
			e. Valrack
			f. AMP
43.	RACK		
	a. Valrack		
	b. Digitron		
	c. HCL		
	d. A Link		
44.	MEASURING INSTRUMENTS		
	a. AMP		
	b. ENERCON		
	C. MECO		
	d. AE		
	e. PROKDV's		

CONTRACTOR

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CHIEF ENGINEER

LIST OF PRINCIPAL / APPROVED MAKES FOR FIRE ALARM WORKS

SI .No	MAKES/AGENCIES/BRANDS	SL NO	MAKES/AGENCIES/BRANDS
1.	COPPER CONDUCTOR PVC INSULATED WIRES	2.	PVC INSULATED ARMoured CABLES(LT/HT)
	a. Finolex		a. Finolex
	b. havells		b. Fort Gloster
	c. V Guard		c. CCI
	d. RR Cables		d. RR Kable
	E. KEI		e. Delton
			f. KEI
		3.	FIRE ALARM PANEL
			a. Honey Well
			b. Carmel
			c. Zicom
			d. Notifier
			e. Mircom/Secutron
			f. Morleyias
			e. Apollo
4.	SMOKE/HEAT DETECTOR	5.	MANUAL CALL POINT/HOOPER/RESPONSE INDICATOR
	a. Apollo		a. Honey Well
	b. Morleyias		b. Zicom
	c. Edward		c. Notifier
	d. System Sensor		d. Simplex
	e. Honey Well		e. Mircom/Secutron
	f. Mircom/Secutron		f. Carmel e. Apollo

SPECIAL CONDITIONS**1. PHOTOGRAPHS OF THE BUILDING**

The contractor shall submit 3 sets of the prints of the photographs size 4"x6" to LIC of India at various stages:

- a. Before commencement of the work.
- b. During progress of work.
- c. Completion before handing over the building

The photographs can also be submitted in CD/DVD in lieu of printed photographs.

One or more photographs shall be taken to have complete clear views of the work as directed by Corporation's Engineer. The further stage of work shall proceed only on confirmation of such photographs seen by LIC Engineers and a written site instructions obtained in this regard.

- 2.** The quoted **PERCENTAGE RATE** shall include for the same and no extra is payable to contractor on this account.

Contractors shall note that the site is working office building. Hence, contractor shall take in to account this aspect and quote their percentage accordingly.

- 3** Contractors are advised to inspect the site before quoting their **PERCENTAGE RATE**. The contractors shall also note that they have to co-operate with the other agencies carrying out the work (s) of LIC of India in the same site.

- 4** The contractors shall obtain "**Work commencement Certificate**" from Municipal authorities/local authorities if required and directed, after approval of layout marked on the ground, inspected by Officials of Municipal authority if directed.

The quoted **RATE** shall include for the same and no extra is payable to contractor on this account.

- 5** The contractors shall obtain "**Completion Certificate**" from Municipal authorities/local authorities if required and directed, after completion of the work. The relevant drawings shall be given by the employer for the above purpose if directed.

The quoted **RATE** shall include for the same and no extra is payable to contractor on this account.

- 6** All statutory fees to be paid to municipal, water and sewerage authorities, water supply connection, sewerage connection and road cutting etc., will be paid/reimbursed by LIC against production of receipts towards payments of such fees.

- 7** The contractors shall not stack building materials on footpath and road margin.

- 8** The contractor shall thoroughly clean all the dust and dirt's, debris etc. and remove all the scaffoldings and other materials used for the works away from the site as and when needed. Disposal of the debris and Surplus Excavated earth should be done in such a way that the site is kept free from such unwanted materials.

- 9** The site is located in commercial area and therefore Contractor shall take all precautions to cause least inconvenience to the neighbors' /surroundings during the construction.

10. There may be some traffic restrictions with regard to heavy vehicles since the site is located in commercial area. Contractor shall take note of the same and obtain necessary permission from appropriate authorities for transportation of materials required for the work. In case work is required to be done during the night time, permission from the Employer as well as local/police authorities shall be taken.
11. Noise pollution should be kept at minimum tolerance level.
12. Contractors to note that if hutments for labour provided at site all the necessary facilities etc., shall be done as per statutory labour laws.

13. OTHER SPECIAL CONDITIONS:

- i) Passenger Lifts of building cannot be spared for lifting materials to work site.
- ii) Labours may allow at site only after showing photo Identity Card issued by the agencies and duplicate of which is to be submitted to our office.
- iii) Gate pass for daily labour may be issued.
- iv) Every efforts should be made to restrict the movement beyond working area.
- v) Since the building is in "No Entry" Zone – there is restriction in movement of vehicle. So information regarding entry of materials to our building should come to us well in advance.
- vi) Materials can be taken away only after getting gate pass from Engg. Deptt.
- vii) If work is to be carried out at night. Prior permission is to be obtained by the agencies.
- viii) Well co-ordination should be maintained with all agencies and designated coordinator from LIC side to avoid anykind of disturbances in office working.
- ix) Every day, before the office starts the common area / working area should be cleaned in all respect if this area is used anyway for the work.
- x) LIC is no way responsible for issuing way bill or C – form to any agencies.
- xi) During the execution of the work, the cleaning of pavements to be done on day to day basis.
- xii) The work is to be carried out in the working office Building with least disturbance to the occupants/staff and therefore the work may have to be carried out in phased manner but entire work is to be completed within stipulated time limit. No consideration shall be given for extension of time limit on account of work taken in phases. Quoted Percentage shall also include shifting of existing furniture, storage units etc during execution of work and rearranging at new/old position/place if required for normal office working.

Please note that, the planning / schedule of work to be finalized floor wise/ wing wise after discussion with Engineer-in-Charge and work to be carried out accordingly. Contractor to note that, sufficient work front would be made available but entire premises will not be available for execution at once.

- xiii) The contractor has to depute sufficient number of supervisory staff for making all arrangements and to ensure no disturbance to occupants.
- xiv) It is responsibility of the contractor to adhere to all security measures for the workers.
- xv) The Contractors has to ensure protection to building and other assets including parked vehicles in the campus. In case of any damages caused due to work or due to ignorance of ant worker, contractor has to make good the damages and / or compensate the LIC for the damages done.
- xvi) Contractor is advised to inspect the site before submitting the tender and examine all parts of the work.
- xvii) Materials with basic rates : In some of the tender items of finishing work like Flooring /Dado/Skirting etc “Basic Price “ of the granite/marble/vitrified tile/Ceramic tile/ lime stone slabs etc are specified in the schedule of quantities . The price variation of these materials shall be adjusted as follows;
Contractor shall purchase the material as per approved samples on getting approval from the LIC for the source and the rates.
The “Basic price of material specified in the tender items shall be inclusive of all costs up to the site of work, including purchase price, all Statutory taxes, transportation charges including loading and unloading charges at all points (except unloading at site), transit insurance but does not include any incidental expenses incurred by the contractor for arranging to take delivery, transportation or payment of octroi charges etc . Which shall be solely to the account of the contractor and shall be included by the contractor in his quoted rates . All other costs such as unloading the material at site , handling ,stacking , storing , providing watch and ward arrangement , loss due to pilferage , theft, damages if any including wastage etc shall be to contractors account.

PRICE VARIATION OF MATERIALS

The actual cost of Material at work site shall be calculated by considering the actual payments made by the contractor and all other costs included in arriving at “Basic Price” of material at site as mentioned as above. The difference in the actual cost (Purchase price) of the material at the work site thus calculated and the Basic price as mentioned in tender shall be adjusted for recovery.

For making adjustment, the contractor shall submit all the copies of the voucher of the payments made and shall produce their original vouchers for verification along with the claim bill, submitted separately.

Price adjustment on material shall be paid/recovered only for the quantity actual consumed and measured in the work. Price variation shall not be paid on wastage. There will not be any adjustment (payable/ recoverable) due to variation in basic rates on account of overheads and profit.

14. In terms of provision of section 33(4) of The insurance law (Amendment) ordinance ,2014 Insurance Regulatory and Development Authority of India (IRDA) ,If It consider expedient to do so may direct any person hereinafter referred to as “Investigation officer” ,to make an investigation as specified under sec 33(1) or carry out an inspection as specified under section 33(2) of The insurance laws (Amendment) Ordinance 2014 who may examine on both any Manager, Managing Director or other officer of the service provider or contractor where the services are outsourced by LIC of India.

15. The quantities shown in the schedule i.e. Interior, Civil, Air-conditioning – VRF System, Modular Furniture, Chairs, Electrical Installation, Data & Telephone cabling, Fire Alarm, Fire hydrant sprinkler system, PA system etc are provisional and are likely to increase or decrease. Some of the items may be omitted altogether. No claim whatsoever shall be entertained on this account.

16. The clause No 37 of conditions of contract mentioned on page no 29 & 30 of BID – III (part – A), clauses no 14 & 20 of General Instruction to Contractors for work on page 34 & 35 of BID – III (part – A) and Annexure-E i.e. Form of Bank Guarantee to secure a lump sum advance on page no 49 to 51 of BID – III (part – A) shall be treated as deleted.

17. All works in course of execution or after execution in pursuance of the Contract, shall at all times be open to the inspection and supervision of the Executive Director (Bldg.) or his authorized representatives and the Contractor or his responsible agent, duly accredited in writing, shall at all such times, be present to receive writing, shall at all such times, be present to receive instructions/orders. The work during the progress or any time before settlement of the final bill, is also liable to be inspected by Chief Technical Examiner of the Central Vigilance Commission, New Delhi, on behalf of the Employer and this shall be also considered as an inspection by the Employer for all purpose.

18. The term “Bidder”, “Tenderer”, mentioned in anywhere in any part of the Bid documents of this work shall be read as “Contractor”.

Same is applied to plural forms of the above terms.

19. The Branch Office is presently functioning in this Premises and Contractor should note that work needs to be executed with minimum disturbance to the working of the office. The Contractor shall inspect the Premises and satisfy themselves before submission of their tender. The site / working area of the Office should be kept neat and clean for the Office to Function. If required work shall be executed after office hours and during holidays with prior permission of the CE.

SCHEDULE OF QUANTITIES

PART - A: CIVIL & INTERIOR WORK

NOTE:

1	The wooden frame & plywood / ply board used in work should be treated with ant termite chemical. i.e. 20%E.C.,with 1% concentration mixed with kerosene/oil as per manufacturers specifications.
2	All wooden sections mentioned in the items shall be seasoned and of finished size, with +/- variation as permissible by LATEST Indian standards.
3	All vertical members of MS frame work of full height partition shall be taken up to ceiling (Normal height up to 3.60 mtr.) and securely fixed to soffits of slab/beams. However measurements of partitions shall be taken & considered only upto false ceiling bottom. The rates quoted shall include for Providing & fixing MS sections as per drawing up to slab/beam soffit level.
4	All lamination to be used in the work shall be high pressure laminate 1.00 mm thick of approved make & shade, unless otherwise specified.
5	The specifications nomenclature of item mentioned below shall have precedence over the drawings enclosed.
6	All T.W/White cedar Beading / Moulding shall be of melamine polish of approved shade / colour & as directed.
7	All plywood wherever mentioned in the items below shall be of BWR plywood confirming toIS: 303 as amended up to date. All the exposed edges of the Ply wood & ply viz., edges ofdesks, edges of ply/block board touching the floor shutter edges etc... shall be provided with 6mm thick. suitable size lipping of TW and polished with melamine polish on exposed surfaces.
8	All painting work shall be in two or more coats over a coat of primer & putty etc including surface preparation etc complete.
9	All materials incl. hardware shall be of approved make only as given in List of Principal makes/brands. In case of non-availability of these makes/brands, Chief Engineer shall allow materials licensed by BIS bearing "ISI" monogram at par with principal makes & samples ofsame shall be got approved before providing/fixing. The hinges shall be of ISI marked Copper Oxidised brass Hinges.
10	The rate of all items of work is inclusive of all taxes, excluding goods & Service Taxes (GST) on works contract. ii) The contractor should be registered with GST authority &has GST registration no. & certificate from the state where the work will be executed.
11	Polishing work to main Teakwood door shutter, T.W. capping for low height partition shallbeof melamine polish of approved colour / shade i.e. melamine polish with machine spry OR as directed.

12	All MS/G.I./Wooden members of full height partition should be extended beyond falseceiling & securely fixed to RCC slabs/beams. Rates shall be inclusive of the same. However, measurements shall be taken finished floor level to false ceiling bottom for payment.
13	Poly urethane (PU) primer, polish (50:50) on laminated surface incl cleaning etc will be done wherever required as per instructions of the engineer in charge.
14	8 mm thick fibre reinforced cement (FRC) board non combustible and resistant to fire finished with acrylic paint to be used for column panelling.
15	All types of partition: - Rates are inclusive of making Door openings at required locations as per drawings including providing & fixing additional frame member (if required) at door opening, concealing / insertion of hard wood runner to facilitate fixing of hinges of door shutter and locks including making rebate by providing plywood & lamination of same type all round the door opening as directed

NAME OF WORK: E-Tender For Civil & Interior Works Including Modular Furniture, Chairs, Electrical Installation, Data & Telephone Cabling, Fire Alarm Systems, and Air Conditioning Air Conditioning For Proposed Modernization Of Branch Office 92 K at First Floor and Second floor of BO Building at Khopoli, Under Thane DO, Maharashtra

SCHEDULE OF QUANTITY

Item No.	Description of work	Qty.	Unit	Rate (Rs.)	Amount (Rs.)
CIVIL & INTERIOR WORK					
C1.0	Providing and fixing full height partly glazed partition of overall thickness 64 mm (approx.) with following specifications and finished with laminate				
	(a) Framework of M.S. hollow sections of size 50 mm x 50 mm and wall thickness 1.6 mm (unit weight 2.38 Kg/m) comprising of horizontal and vertical members @ 600 mm c/c or part thereof, vertically and horizontally fixed firmly to walls/floors/ceiling with suitable size dash fasteners/ anchor fasteners / metal screws including providing additional horizontal / vertical members in the frame work, if required at the joint of plywood. Rate is inclusive of welding, grinding of joints, making holes in MS sections for passing conduits & making arrangement for fixing of MS electrical switch boxes wherever required using MS flats of suitable section etc. including applying two coats of primer on frame work with approved steel primer, all complete as directed at site.	98	Sqm	3602	352996.00
	(b) Bottom & top panels of 6 mm thick BWR plywood confirming to IS: 303 plywood fixed on both sides of framework and finished on both side with 1mm thick High Pressured laminates of approved shade and make. Height of bottom panel shall be equal to the height of Low Height Partition i.e. 1200 mm or less and height of top panel shall be upto False Ceiling level, all complete as directed at site.				
	(c) 5.00 mm thick clear float glass including opaque etching film of design in middle panel fixed with Teak wood beading of section 30 x12 mm on both side including polishing of the beading with melamine polish and 1 mm thick High Pressured laminates on exposed framework, etc. complete. Height of glass panel shall be about 900 mm (approx).				
	(d) Skirting of 100 mm high with 1mm thick High pressure laminates of dark shade on both sides of partition.				

Item No.	Description of work	Qty.	Unit	Rate	Amount
C2.0	Providing and Fixing full height partition of overall thickness 64 mm (approx.) with following specifications				
	(a) Providing and fixing framework of M.S. hollow sections of size 50 mm x 50 mm and wall thickness of 1.6 mm (unit weight 2.38 Kg/m) comprising of horizontal and vertical members @ 600 mm c/c or part thereof, vertically and horizontally fixed firmly to walls/ floors/ceiling with suitable size dash fasteners/ anchor fasteners / metal screws including providing additional horizontal / vertical members in the frame work, if required at the joint of plywood. Rate is inclusive of welding, grinding of joints, making holes in MS sections for passing conduits & making arrangement for fixing of MS electrical switch boxes wherever required using MS flats of suitable section etc. including applying two coats of primer on frame work with approved steel primer, all complete as directed at site.	63	Sqm.	4230	266490.00
	(b) Fixed with 6 mm thick BWR plywood confirming to IS: 303 plywood on both sides of framework and finished on both sides with 1 mm thick High Pressured laminates of approved shade and make.				
	(c) Skirting with 1 mm thick High pressure laminates of dark shade 100 mm high on both sides of partition.				
C3.0	Providing and Fixing full height partition of overall thickness 63 mm (approx.) with following specifications				
	(a) Providing and fixing framework of M.S. hollow sections of size 50 mm x 50 mm and wall thickness of 1.6 mm (unit weight 2.38 Kg/m) comprising of horizontal and vertical members @ 600 mm c/c or part thereof, vertically and horizontally fixed firmly to walls/ floors/ceiling with suitable size dash fasteners/anchor fasteners / metal screws including providing additional horizontal / vertical members in the frame work, if required at the joint of plywoods. Rate is inclusive of welding, grinding of joints, making holes in MS sections for passing conduits & making arrangement for fixing of MS electrical switch boxes wherever required using MS flats of suitable section etc. including applying two coats of primer on frame work with approved steel primer, all complete as directed at site.	29	Sqm.	2871	83259.00

Item No.	Description of work	Qty.	Unit	Rate	Amount
	(b) Fixed 6 mm-thick BWR plywood confirming to IS :303 plywood on both sides of framework. Finished with on one side laminate of approved make and on other side finished with Fire resistant paint as per requirement. The relevant paint item shall be measured and paid separately.				
	(c) Skirting with 1mm thick High pressure laminates of dark shade 100 mm high on outer / front side of partition.				
C4.0	Providing and Fixing full height partition of overall thickness 62 mm (approx.) with following specifications				
	(a) Providing and fixing framework of M.S. hollow sections of size 50 mm x 50 mm and wall thickness of 1.6 mm (unit weight 2.38 Kg/m) comprising of horizontal and vertical members @ 600 mm c/c or part thereof, vertically and horizontally fixed firmly to walls/ floors/ceiling with suitable size dash fasteners/ anchor fasteners / metal screws including providing additional horizontal / vertical members in the frame work, if required at the joint of plywoods. Rate is inclusive of welding, grinding of joints, making holes in MS sections for passing conduits & making arrangement for fixing of MS electrical switch boxes wherever required using MS flats of suitable section etc. including applying two coats of primer on frame work with approved steel primer, all complete as directed at site.	9	Sqm.	2591	23319.00
	(b) Fixed 6mm thick BWR plywood confirming to IS: 303 plywood on both sides of framework. Finished with fire resistant paint on both sides as per requirement. The relevant paint item shall be measured and paid separately.				
C5.0	Providing and Fixing low height 1200 mm (approx.) partition of overall thickness 64 mm (approx.) with following specifications (a) Providing and fixing partition upto 1200mm height consisting of frame work of MS section of 50mm x 50 mm and wall thickness of 1.6 mm (Unit weight 2.38 Kg/m) comprising of horizontals and verticals @ 600 mm c/c or part thereof, vertically and horizontally fixed firmly to walls/ floors with suitable size dash fasteners/ anchor fasteners /metal screws including providing additional horizontal / vertical members in the frame work, if required at the joint of plywoods. Rate is inclusive of welding, grinding of joints, making holes in MS sections for				

Item No.	Description of work	Qty.	Unit	Rate	Amount
C5.0	passing conduits & making arrangement for fixing of MS electrical switchboxes wherever required using MS flats of suitable section etc. including applying two coats of primer on frame work with approved steel primer, all complete as directed at site.	6	Sqm.	3809	22854.00
	(b) Fixed with 6 mm thick BWR ply confirming to IS :303 fixed on both sides of framework. Finished both sides with 1mm thick high pressure laminate of approved make & shade etc. complete as directed and as per requirement.				
	(c) Fixed with rubber wood capping of Size 64mm x 12 mm at Top of low height partition including melamine polish on wooden surfaces and necessary fixing system i.e. screws etc. complete.				
	(d) Skirting with 1mm thick High pressure laminates of dark shade 100 mm high on both side of partition.				
C6.0	Providing and fixing full height glazed partition of overall thickness 64 mm (approx.) with following specifications and finished with laminate				
a	Framework of M.S. hollow sections of size 50 mm x 50 mm and wall thickness 1.6 mm (unit weight 2.38 Kg/m) comprising of horizontal and vertical members @ 600 mm c/c or part thereof, vertically and horizontally fixed firmly to walls/ floors/ceiling with suitable size dash fasteners/ anchor fasteners / metal screws including providing additional horizontal / vertical members in the frame work, if required at the joint of plywoods. Rate is inclusive of welding, grinding of joints, making holes in MS sections for passing conduits & making arrangement for fixing of MS electrical switch boxes wherever required using MS flats of suitable section etc. including applying two coats of primer on frame work with approved steel primer, all complete as directed at site.	0	Sqm.	3483	0
b	At skirting and above 2.10 mt., 6 mm thick BWR plywood confirming to IS: 303 plywood fixed on both sides of framework and finished on both side with 1mm thick High Pressured laminates of approved shade and make. Two nos. of M.S. hollow section (50 mm x 50 mm x thickness 1.6 mm) one above other section fixed at floor level to make skirting high 100 mm.				

Item No.	Description of work	Qty.	Unit	Rate	Amount
c	12 mm thick toughened glass including opaque etching film of design fixed with Teak wood beading of section 26x25 mm on both side including polishing of the beading with melamine polish and 1 mm. thick High Pressured laminates on exposed framework. Height of glass panel shall be about 2100 mm(approx).				
C7.0	Providing and fixing seasoned Sal wood frame work of any size and section say 50×50 mm, 40×40 mm., 65x38 mm. etc. or else for verticals & horizontals as required. Spacing for partitions, panelling and in door frame including the frame work to ceiling, walls etc. as required including a coat of anti-termite chemicals etc. complete.	0.50	Cum	109937	54968.50
C8.0	Providing and fixing Teak wood frame work section 50x50mm, 40x40mm, 65x38mm etc. verticals & Horizontals at required spacing for partitions/panelling, 125x65mm sections in door frame including fixing the frame work to ceiling, walls etc. including a coat of anti termite chemical etc. complete.	0.20	Cum	135880	27176.00
C8.0a	Providing and fixing Conference table of width approx. 750 mmX length all as per site requirement x 750 mm height in "U" shape made out of 19 mm thick BWR plywood for basic structure frame work of sal wood (section 50 mm x 50 mm approx.) i.e. top, verticals, foot rest portion and vertical intermediate dividers @ 600 mm c/c. 12 mm, 6 mm BWR ply and flexi ply of adequate thickness for curved portion all as per requirement and for concealing electrical wiring / data/ telephone/ microphone cables & switches, complete including necessary etc. Salwood for making frame work (section 50 mm x 50 mm approx.) of partition below table top as per requirement. The table shall be provide with 1 mm thick high pressure laminate on all exposed faces in approved pattern including making grooves. The inner edge of table shall be 38 mm thick by providing additional 19 mm BWR plywood and the same shall be finished with teak wood round shaped moulding. Table top and beading shall be polished with PU (50:50) polish laminated finish and other exposed surface of laminate shall be melamine and polyurethane polished. All internal surface shall be finished with 0.8 mm lamination.	0	Rm	11451	0

Item No.	Description of work	Qty.	Unit	Rate	Amount
C9.0	Providing and fixing 35 mm thick Fire retardant Solid core flush door glazed shutter confirming to IS :2202(partI) and IS :5509 of approved make finished with 1 mm thick High pressure laminates of approved shade and make on both sides, 10 mm thick teak wood lipping with melamine polish finish all round the edge, 3 nos. 125 mm satin nickel finished brass bearing hinges. Rates are inclusive of cutting the door in desired shape and pattern	16	Sqm.	5503	88048.00
	and providing and fixing 5 mm thick clear float glass in the cut out (size 0.40m x 1.55m Approx.) providing opaque etching film of design on surfaces of glass with teak wood beading (12 mm x 10 mm approx.) with melamine polish all complete as directed. Rates include of cutting the door in desired shape and pattern.				
C10.0	Providing and fixing 35 mm thick Fire retardant Solid core flush door shutter confirming to IS :2202 (part I) andIS :5509 of approved make finished with 1 mm. thick High pressure laminate on both sides, 10 mm. thick teak wood lipping with melamine polish finish all round the edge, 3 nos. 125 mm satin nickel finished of approved make, brass bearing hinges per shutter.	2	Sqm.	5438	10876.00
C11.0	Providing and fixing 35 mm thick Fire retardant Solid core flush door shutter confirming to IS :2202(part I) andIS :5509 of approved make finished with 1 mm. thick High pressure laminate one side and fire resistant paint on other side of approved shade and make , 10 mm. thick teak wood lipping with melamine polish finish all round the edge, 3 nos. 125 mm satin nickel finished of approved make, brass bearing hinges per shutter.	5	Sqm.	5293	26465.00
C12.0	Providing & fixing fully glazed Teak Wood single/doubleleaf door shutter with frame work consisting of Top rail ofTeak wood section 150X 38 mm. Styles of Teak WoodSection 150X 38 mm and bottom rail of Teak WoodSection 200 x 38 mm. Glass panel shall be of 12 mmthick toughen glass with opaque etching film as perdirected design, fixed with Teak wood beading ofrequired size. Shutters shall be fixed with pivot hingewith heavy duty floor spring of approved make. Thedoors shutters shall have one dead lock of approvedmake; .300 mm long stainless steel pipe handles 2 nos.per shutter, one SS tower bolt of 200 x 12 mm. The teakwood, beading shall be finished with melamine polish etc. complete or as directed. Pipe handles, floor spring , lock ,tower bolt to be paid separately.	13	Sqm.	6965	90545.00
C13.0	Providing & fixing 1 mm thick High pressure laminate of approved make & shade on partition or any other places as directed as per design and including adhesive etc.complete.	20	Sqm	749	14980.00

Item No.	Description of work	Qty.	Unit	Rate	Amount
C14.0	Providing & fixing 0.8 mm thick High pressure laminate of approved make & shade on partition or any other places as directed as per design and including adhesive etc. complete.	15	Sqm	616	9240.00
C15.0	Providing & fixing BWR plywood conforming to IS :303 plywood in shelves, verticals etc. in furniture / partition with screws including exposed surface lipping etc complete as per drawing & direction				
a)	6mm thick BWR plywood conforming to IS :303	20	Sqm	789	15780.00
b)	9mm thick BWR plywood conforming to IS :303	15	Sqm	976	14640.00
c)	12 mm thick BWR plywood conforming to IS :303	15	Sqm	1196	17940.00
d)	19 mm thick BWR plywood conforming to IS :303	15	Sqm	1632	24480.00
C16.0	Providing & fixing glass panes with top edge polished to be fixed in partition/ paneling excluding cost of beading complete as per drawing & direction.				
a)	With 5 mm thick float glass	2	Sqm.	1354	2708.00
b)	With 8 mm thick float glass	2	Sqm.	1526	3052.00
c)	With 12 mm thick float glass	2	Sqm	1831	3662.00
C17.0	Providing & fixing Teak Wood Moulding wherever required and ordered specifically including cost of melamine polish, screws, nails, glue etc complete.				
a)	75X25 mm	10	Rm	284	2840.00
b)	35X12mm	10	Rm	96	960.00
c)	12X12mm	10	Rm	50	500.00
C18.0	CASH COUNTER : Providing & fixing Cash counter of width approx. 600 mm minimum and overall height 1100mm (approx.) made out of 19 mm thick BWR plywood conforming to IS :303 plywood at table top, customer top, side verticals & partition in between cashiers with Teak wood lipping at edges including melamine polish all as per drawing consisting of the following.	3.30	Rm	13448	44378.40
	(a) 18 mm thick Black Granite stone of approved quality & shade at service top of 350mm width approx, fixed on 19mm thick BWR plywood conforming to IS: 303 plywood & separation of 350mm high made in curved shape which is fixed to working top as directed. Working top made of 19mm thick BWR plywood confirming to IS: 303 plywood & finished with 1.0 mm thick High pressure laminates of approved shade. (Granite rates are inclusive of grinding/moulding/chamfering of edges.)				

Item No.	Description of work	Qty.	Unit	Rate	Amount
	(b) One drawer unit (at every 1200-1500mm length of unit) of 400mm wide drawer unit having a tea tray, three nos of drawers below to be made out of 12 mm thick BWR plywood conforming to IS : 303 plywood at sides, 6 mm thick BWR plywood conforming to IS :303 plywood at bottom, 19 mm thick block board at front and rear including cash separation arrangement with 6 mm thick BWR conforming to IS :303 plywood with telescopic type sliding channels. Front surface finished with 1.0 mm thick High pressure laminates & internal surface with 0.8 mm thick High pressure laminates complete. The drawer side units to be prepared in 19mm thick BWR plywood conforming to IS :303plywood. All necessary hardware's such as brass hinges, handles (10 mm dia 96 mm long of approved make), locks (Godrej or equivalent apprved make) etc. of approved make & as directed.				
	(c) Side unit for printer and CPU of overall size 900 mm long 450mm wide and 750 mm high made of 19mm thick BWR plywood conforming to IS :303 plywood at top, bottom & sides & in one shelf of 400 mm wide up to balance portion after keeping CPU on one side, Back 6 mm thick BWR conforming to IS :303 plywood., one openable shutter with 19 mm thick BWR conforming to IS :303 block board, and self of 19 mm thick BWR plywood conforming to IS :303 plywood. Exposed portions to be finished with 1 mm thick High pressure laminates & internal surfaces with 0.8mm thick balancing High pressure laminates. All necessary hardware's such as brass hinges, handles (10 mm dia 96 mm long of approved make), locks (Godrej or equivalent apprved make) etc. of approved make & as directed. One sliding acrylic key board (ready made) with telescopic channels of approved make i.e. ebco or equivalent make for table.				
	(d) Front surface finished with 1.0mm thick High pressure laminates of approved shade, painting internal surfaces with Fire resistant paint. The rate is inclusive of fixing of fold cash box plate.				
	(e) One tray in 19mm BWR plywood conforming to IS :303ply for keeping the papers as directed including making circular slit in table top for cables & papers all as per drawing and as directed.				
	(f) Footrest of Sal wood of section 70X35mm painted with Fire resistant paint of approved make and shade.				
C19.0	Providing & fixing 12 mm thickness. Plain glass of approved make as partition on cash counter with salwood frame work all round/intermediate with 46 x 45 mm (finished size) including opaque etching film, necessary cutting for service windows with all exposed edges grounded and polished etc. complete as per drawing or as directed.	6	Sqm	4070	24420.00

Item No.	Description of work	Qty.	Unit	Rate	Amount
C20.0	Gypsum Board False Ceiling:				
	Providing & erecting single layer at all height suspended ceiling which includes G.I. perimeter channels of Size 0.55 mm thick having one flange of 20mm and another flange of 30mm and a web of 27 mm along with perimeter of ceiling, screw fixed to brick wall/partition with the help of nylon sleeves and screws, at 610 mm centres. then suspending GYP STEEL ULTRA CRP surface ribbed intermediate channels of size 45 mm(with two flanges of 15 mm each) from the soffit at 1200 mm centres with Gyp steel ULTRA ceiling angle of width 25 mm x 10mm fixed to soffit with GI cleat and steel expansion fasteners.	230	Sqm	1243	285890.00
	Gyp steel ULTRA ribbed ceiling section of having web of 51.5 mm and two flange of 26 mm each with lips of 10.5mm are then fixed to the intermediate channel with the help of connecting clip and in direction perpendicular to the intermediate channel at 457mm centre.				
	Single layer of 12.5mm tapered edge Gyp board plain (conforming to IS: 2095 – Part I, 2011) is then screw fixed to ceiling section with 25mm drywall screws at 230mm centres.				
	Screw fixing is done mechanically either with screwdriver or drilling machine with suitable attachment. Extra channels will be provided at drops for which no extra cos will be paid.				
	Finally Square and tapered edges of the boards are to be jointed and finished so as to have a flush look, which includes filling and finishing Gyproc jointing compound. Gyproc joint paper tape and two coats of Drywall top coat as per recommended practice of Saint-Gobin Gyproc India.				
	Rates are inclusive of two coats of Acrylic emulsion interior grade of off white colour over a coat of primer.				
	Including making necessary openings for light fittings, AC grills, diffusers, cut outs made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction. <i>(Note: Only plan area shall be measured for the payment. The drops for design purpose, which are provided as per drawing and as directed will be measured and paid separately. No deductions for light cuttings separately.) The material used in the false ceiling are to be got certified by the manufacturer.</i>				
C21.0	Providing & Fixing decorative mouldings/cornices of P.O.P. of approved design etc. complete including painting two or more coats of acrylic emulsion paint of approved shade and make etc. complete as directed.				
a)	75 mm. to 100 mm. wide.	40	Rm	166	6640.00
b)	150 mm to 100 mm wide	70	Rm	177	12390.00

Item No.	Description of work	Qty.	Unit	Rate	Amount
C22.0	Mineral Fibre tiles such as Armstrong or equivalent False Ceiling:				
	Providing and fixing in true horizontal levels False ceiling system (Mirco Look Ultima) of grid size 600x600mm with G.I. ceiling framework as per manufacturer's specifications using 15mm grid and laying Fine fissured acostic ceiling tiles 16mm thick of size 600x600 mm, NRC-0.55 and R.H.-99%-microlook tagular edges (OR) AMF Performance Ceiling System of equivalent specifications. The rates shall be inclusive of providing and fixing adjustable hangers.	151	Sqm	1570	237070.00
	The cost to include the cost of frame work for fixing light fixtures. The light fixtures shall not be fixed directly on to the tiles, complete in all respects. Cut outs will not be deducted while measuring the ceiling area.				
	The cost to include the cost of frame work for providing lighting arrangement LED and providing making additional T/angle for creating opening for providing lights for which no extra payment will be made (only plan area will be measured). The material used in the false ceiling are to be got certified by the manufacturer.				
C23.0	Providing and fixing cover for safe 1.5x1m approximate size in 19mm thick BWR plywood conforming to IS :303 plywood at sides ,top and front shutters with a handle per shutter, tower bolt 1no, 1no magnetic latch, 3 Nos 75mm long 1.5mm thick brass hinges per shutter and approved make lock with keys. 1mm thick High pressure laminates to top and sides exposed surfaces and painting of two OR more coats of textured paint/Fire resistant paint to the remaining surfaces all inclusive etc. complete as directed (only front area will be measured for payment).	3	Sqm	11089	33267.00
C24.0	Providing and supplying of 750x450x750mm for keeping Forms having 20 equal compartments made up of 19mm thick BWR plywood confirming to IS : 303 plywood with teakwood lipping at edges at top, bottom & verticals & 12mm thick BWR plywood confirming to IS :303 in compartments, 19mm thick BWR confirming to IS : 303 block board shutters provided with 75mm brass hinges 2 no per shutter , approved ball catchers, locks and brass handles, finished with 1mm thick high pressure laminate on external surfaces with fire retardant paint internally etc complete.	1	No	8913	8913.00

Item No.	Description of work	Qty.	Unit	Rate	Amount
C25.0	Providing and Fixing Wall paneling with 6mm thick BWR ply conforming to IS 303 finished with 1mm thick laminate with following specification:				
	(i) Frame work made of G.I. section of 50mm x 25mm of 0.55mm thick for wall paneling. Section having a knurled web of 50mm and two flanges of 25mm each with lips of 10.55mm placed @ 610mm centre to centre in perimeter channel having one flange of 20mm and another flange of 30mm with thickness of 0.55mm and web of length 27mm. Perimeter channel is fixed on the floor and the ceiling with the nylon sleeves @ 610mm Centre to Centre with fully threaded self – tapping drywall screws. plywood is fixed to the ‘W’ profile/ceiling section with 8gx25mm CSK screws @ 300mm Centre to Centre., all complete as per the drawing and directions of Engineer-in-charge. The item is inclusive of Teakwood beading of size 32x20mm (with polishing) on top as per design and complete as directed. consisting of horizontal channel 50mm wide having equal flanges fixed to the floor /wall /ceiling at the spacing of 610 mm centre to centre with dash fastener of 12.5 mm dia meter 50 mm length or suitable anchor fastener or metal screws with nylon plugs.	25	Sqm.	2095	52375.00
	ii) Fixing of 6mm thick BWR plywood conforming to IS 303 with frame work by 25 mm long dry wall screws on studs, The plywood are to be fixed to the frame work with joints staggered to avoid through cracks, including jointing and finishing to a flush finished with 1mm thick approved High pressure laminates including skirting and finishing the joints and grooves etc. Teak wood moulding of size 32x20mm at corners finished with melamine polishing etc complete.				
C26.0	Providing and fixing in position concealed frames G.I. section (25 x 50 mm) @ 450 mm centre to centre for Column Cladding using 8 mm thick FRC (Fibre Reinforce Cement) designer board like V-designer board (or any other equivalent) of lake & Hill/Ocean/cedar/plain (High pressure steam cured) as per IS 14862:2000 Type “B” Category 3 fixed on the “W” profile /Ceiling section (0.55mm thick) having a knurled web of 51mm and two flanges of 26mm each with lips of 10.55mm placed @ 610mm centre to centre in perimeter channel having one flange of 20mm and another flange of 30mm with thickness of 0.55mm and web of length 27mm. Perimeter channel is fixed on the floor and the ceiling with the nylon sleeves @ 610mm centre to centre with fully threaded self –tapping drywall screws. FRC board is fixed to the ‘W’ profile/ceiling section with 8gx25mm CSK self-drilling fibre cement screws @ 300mm centre to centre, all complete as per the drawing and directions of Engineer-in-charge.	149	Sqm	1826	272074.00

Item No.	Description of work	Qty.	Unit	Rate	Amount
	The item is inclusive of Teak wood beading of size 60x20mm (with polishing) on top as per design and applywooding acrylic emulsion paint over a coat of primer over FRC Designer board etc. complete as directed.				
C27.0	Providing and fixing Cheque cum suggestion box of size 300 x 250 x 120 mm deep made up of 12mm thick BWR plywood conforming to IS :303 plywood, with Teak Wood lipping at edges, 12 mm thick BWR plywood conforming to IS :303 plywood at back, shutter provided with 19mm thick BWR plywood confirming to IS :303 plywood , 2 Nos. 50mm long brass hinges & lock, finished with 1mm thick lamination on external faces & textured paint/Fire resistant painting internally including making slit at the top.etc. Complete.	1	No	1294	1294.00
C28.0	Providing and fixing TRAP DOOR openable type made out of 19mm thick BWR plywood conforming to IS :303 plywood with brass hinges 75x18x18mm on sal wood frame of 75x50mm. All exposed edges shall be finished with 5mm thick TW lipping. The frame work shall be secured to the ceiling with proper vertical MS/ salwood frame. All exposed/ internal surfaces are to be painted with synthetic enamel paint/ fire retardant paint. Item includes hinges, lend key trap door lock shall form the part of standard fitting & fixtures as per directions.	4	Sqm	3972	15888.00
C29.0	Providing and fixing 450 mm deep and 2100 mm (approx.) full height storage unit made of 19 mm thick BWR plywood conforming to IS :303 plywood at verticals, top, bottom and partition @ 900mm C/C or part thereof and 8 mm thick BWR plywood conforming to IS :303 plywood at back side & shelves of 19mm thick BWR plywood conforming to IS :303 plywood one at 75mm above floor & 4 intermediate shelves at 450mm centre-to-centre approx. and 19 mm thick blockboard conforming to IS :303 for shutter (max 450 mm wide) in two parts and each part having 5 nos of 75mm long 1.5mm thick brass hinges magnetic catchers, Godrej make cupboard locks with long keys with teak wood lipping, one no. SS handle 96 mm long of 10 mm dia for each shutter, open edge of the 19 mm thickness plywood and block board shall be finished Teak wood beading with melamine polish. All internal surfaces of storage cabinet finished with 0.8 mm balancing high pressure laminate. All other exposed sides are to be finished with 1mm thick high pressure laminates etc. complete as per direction. Every alternate shutter shall have two no. 75 mm long brass tower bolts. (The front elevated area shall be measured for payment).	20	Sqm	8564	171280.00

Item No.	Description ofwork	Qty.	Unit	Rate	Amount
C30.0 a	Providing and laying Vitrified tiles in floor with different sizes (thickness to be specified by the manufacturer), with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid with cement based high polymer modified quick set tile adhesive (water based) conforming to IS : 15477, in average 6 mm thickness, including grouting of joints. The item is inclusive of maintaining 3 mm joints with spacers and grouting the joints using Epoxy Grout mix of 0.70Kg of Organic coated filler of desired shade (0.10 kg. of hardener & 0.20 Kg of Resin per Kg.)including filling /grouting and finishing in flooring complete as per direction of Engineer in-charge.600 x 600 mm vitrified tiles in officehall area. (Basic Rate of Tile Rs. 560 /- per Sq.mt.)	370	Sqm	1575	582750.00
C30.0 b	800 x 800 mm approved vitrified tiles in lobby /commonarea (Basic Rate of Tile Rs. 900 /- per Sq.mt.)	10	Sqm	1937	19370.00
C31.0 a	... do as above T.I. no. C30.0 a but skirting 100 mm height including filling the joints etc complete.(Basic Rate of Tile Rs. 560 /- per Sq.mt.)	65	Rm	134	8710.00
C31.0 b	... do as above T.I. no. C30.0 b but skirting 100 mm height including filling the joints etc complete.(Basic Rate of Tile Rs. 900 /- per Sq.mt.)	10	Rm	155	1550.00
C32.0	Providing & fixing 12 mm thick soft board fixed with 6mm thick BWR plywood conforming to IS :303 plywood backing with approved cloth including teak wood frame work of size 45 mm X 45 mm (finished size) with melamine polishing including fixing arrangement by picture plate etc. complete.	13	Sqm.	2465	32045.00
C33.0	Providing sofa without arms having overall depth 675mm and overall height 750 mm consisting of the following :The basic structure of sofa shall be of 19 mm thick BWR plywood conforming to IS :303 plywood wood and 35x 70 mm salwood frame. Four legs of 70x70 mm sal wood sections of suitable height. The seat tobe made out of 100 mm thick HDPU foam and back cushion in 75 mm thick HDPUfoam including making rounding etc. with approved upholstery minimum of Rs. 250/- per meter. of approved shade and pattern including painting / polishing to the exposed surfaces etc. complete as directed.	6	Rm	6035	36210.00
C34.0	Providing & fixing Centre Table of overall size 900 x 600 mm x 450 mm height (finished size) with 12 mm thick clear glass top with etching in approved pattern, fixed on framework of Teak wood consistent of four legs of section of 65 x 40 mm (finished size) and with battens of section of 38 x 65 mm connected one at 75 mm above floor & other at top etc. with PU polishing to Teak wood etc. complete as directed.	1	No	4346	4346.00

C35.0	Providing & fixing Corner Table of overall size 600 x 600 x 450 mm high with 12 mm thick Clear glass top with etching in approved pattern, fixed on frame work of Teak wood sections 40x40mm (finished size) having four legs and with Teak wood battens of size 25x40mm (finished size) connected at 75 mm above floor level and other at top including PU polishing to Teak wood etc. complete as directed.	1	No.	2072	2072.00
C36.0	Providing & fixing 19mm thick Writing Top for Dispatch, 750 mm wide mounted on wall / partition supported on 19 mm thick verticals at 1200mm centre to centre, made of 19 mm thick BWR plywood conforming to IS: 303 plywood, with section Teak Wood moulding of section 25x19 mm at top & lipping at edges. Finished with 1mm thick high pressure laminate on exposed faces & painting internal surfaces with synthetic enamel paint putty and fire retardant paint etc. Complete.	2	Rm	3083	6166.00
C37.0	Providing & fixing computer table of overall width 600 mm & overall height 750 mm made up of 19 mm thick BWR plywood conforming to IS :303 plywood with Teak Wood lipping at edges including painting internal surface with synthetic enamel paint putty and fire retardant paint & polishing teak wood work with poly urethane polish. The other details are as per following: (a) 19 mm thick Top of BWR plywood conforming to IS :303 plywood with teak wood beading of section 20 x 38 mm at edge and top surface finished with 1.0mm thick high pressure laminates of approved shade. (b) One drawer unit (every 1200-1500 mm length of unit) of 400 wide drawer unit having drawer at top supported on sliding channels telescopic type & shelf below with section of 19 mm thick BWR plywood conforming to IS :303 for every 1200 mm unit length of table. Front surfaces finished with 1 mm thick high pressure laminate and providing approved SS HANDELS, locking arrangement to drawer & shutter with ball catcher to shutter. (c) Footrest of sal wood of section 70 x 35 mm painted with synthetic enamel paint putty and fire retardant paint of approved make & shade. (d) One sliding tray of acrylic readymade in the centre for key board of suitable size. (e) One tray in 19mm BWR plywood conforming to IS :303 for keeping the papers as directed including making slit in table top for cables & papers and providing 19mm thickness BWR plywood conforming to IS :303 plywood box for keeping CPU.	3.3	Rm	6600	21780.00

Item No.	Description of work	Qty.	Unit	Rate (Rs.)	Amount (Rs.)
C38.0	Providing and fixing running counter type tables of 600 mm wide 900 mm long each for computer in area near UPS room made of 19 mm thick BWR plywood conforming to IS :303 plywood at top & verticals at 900 c/c including Teak Wood moulding finished with 1 mm thick High pressure laminates including acrylic key board tray etc complete.	9	Rm.	3399	30591.00
C39.0	Providing and Fixing over Door Closers sleek type ISI marked with projecting arms of Hyper/Everite /Hardwin or other approved make to be fixed as per the manufacturer's instructions etc., all complete.	4	No	1158	4632.00
C40.0	Providing and Fixing Euro profile Mortise Dead Locks 1614 type (Godrej make) or equivalent.	4	No	1105	4420.00
C41.0	Providing and fixing double action hydraulic floor spring of approved brand and manufacturer conforming to IS:6315 having brand logo embossed on body/plate with double spring mechanism and door weight upto 125 kg for doors including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floorfinishing and cover plates with brass pivot and singlepiece M.S sheet outer box with slide plate etc. complete as per the direction of Engineer -In Charge. Stainless steel cover plate shall be of minimum 1.25mm thickness.	6	No	2519	15114.00
C42.0	Providing and fixing Stainless steel AISI 316 Grade 300 mm long 22 mm dia handles of Kich or equivalent make	8	Pair	761	6088.00
C43.0	Providing and fixing Superior quality of Float glass Mirror with plastic frames (Cabinet type) overall size 453x357mm (approx.) of approved make, colour, pattern fixed to wall with screws etc., complete as directed.	4	No	1169	4676.00
C 44.0	P/F vertical blinds of approved make & shade with 100 mm wide imported slates with top rail, rods for adjustment of blinds, heavy nylon cord acrylic runner and fixing brackets etc complete. (The area of window opening / panels whichever is less shall be measured for payment.)	40	Sqm	1672	66880.00
C45.0	Providing Wall Care putty of Birla Wall Care or equivalent approved make having 1 mm thick to walls, beams, slabs etc. after preparation of base on existing painting / POP as directed complete. (The rate is including the scraping the existing painting /POP)	20	Sqm	109	2180.00

Item No.	Description of work	Qty.	Unit	Rate (Rs.)	Amount (Rs.)
C46.0	Providing & applying two or more coats of acrylic based Oil bound distemper paint including a coat of primer of approved make and shade after scraping, cleaning and preparation of base for application of paints complete.	120	Sqm.	124	14880.00
C47.0	Providing & applying two or more coats of synthetic enamel paint including a coat of primer of approved make and shade after scraping, cleaning and preparation of base for application of paints complete.	10	Sqm.	115	1150.00
C48	Providing & applying texture finished paint of two or more coats including a coat of primer of Alteckor approved make and shade after scraping, cleaning and preparation of base for application of paints complete as per direction.	20	Sqm.	215	4300
C49	Providing & applying two or more coats of fire resistant paint including a coat of primer of approved make and shade after scraping, cleaning and preparation of base for application of paint as per direction.	5	Sqm	304	1520.00
C50	Providing and applying two or more coats of 1st Quality acrylic Emulsion paint of Interior grade including a coat of primer of approved make and shade after scraping, cleaning and preparation of base for application of paint as per direction.	560	Sqm	139	77840.00
C51	Providing and applying Melamine polish to wood work of approved shade including surface preparation etc complete.	6	Sqm	750	4500.00
C52	Providing and applying poly urethane (PU) primer, polish (50:50) on laminated /veneer/woodwork etc surfaces including cleaning etc complete as directed.	10	Sqm.	541	5410.00
C53	Providing & fixing Single Window cum Enquiry counter with overall width 750 mm and overall height 1030 mm made up of 19 mm th Fire Retardant plywood confirming to IS :5509 ply at top sides , verticals and front etc as per the shape & size given in the drawing. The counter shall have drawer unit (every 1200-1500mm length of unit) consisting of one tea tray, one drawer & storage below with one shelf of 19 mm thk. Fire Retardant plywood confirming to IS :5509 ply with shutter of 19 mm thk. Fire Retardant plywood confirming to IS :5509 block board including all hardware's like locks, telescopic channels, handles hinges etc. One sliding acrylic key board (ready made) with telescopic channel of approved make for table. Providing 19mm thk. Fire Retardant plywood confirming to IS :5509 Ply box for keeping CPU. The counter shall have 8 mm th clear float glass (of size & shape as given in drawing) fixed in ply boxing with S. S. studs/pins as given in the drawing. The external surfaces shall be finished in 1 mm thk High pressure laminates and internal surfaces with 0.8 mm thk. High pressure laminates etc. complete or as directed.	5	Rm	5775	28875.00
	Total amount				2710352.90

Item No.	Description of work	Qty.	Unit	Rate (Rs.)	Amount (Rs.)
M1	Providing and fixing anodized aluminium 7.5 mm deco grill (min.anodic coating 15 micron) of approved design and pattern with approved standard section and fixed to the frame with C.P. brass/stainless steel screws @ 200 mm C/C, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodized aluminium standard section around the opening, all complete as per requirement and direction(only wt of grill to be measured for payment).	10.00	Sqm	1102	11020.00
M2	P/F 20 mm th stone slabs in Treads of steps in single piece upto length of 1500 mm on bed of 25 mm th C.M.1:6 including cement slurry, filling joints with matching pigment, polishing , making half round moulding for nosing & grooves etc complete.	6	Sqm	4661	27966.00
M3	P/F 12 mm th stone slabs of approved shades in skirting,risers, dado & jams/sills of doors & windows etc on backing of 12 mm th. C.M 1:3 including cement paste, filling joints with matching cement , rubbing etc complete. 12 mm th. Granite tiles of approved shades	5.00	Sqm	3096	15480.00
M4	Dismantling the brickwork of any thickness (Cement/ lime mortar) including plastering etc and mending good all the damages including carting away the debris outside the worksite.	1	Cum	1489	1489.00
M5	Supplying and fixing Form work/centering with wooden plank/ steel plates and shuttering including strutting, propping etc., in all floors, at all levels and lift and removal of forms for Foundations. Footings, pedestals, columns, plinth beams, Grade beams, tie beams, stair case foundation & walls, cantilevers, projecting slabs up to plinth level, Columns, piers, pillars, walls of any thickness, vertical and horizontal fins, facias, drop walls, parapet walls, etc.	21	Sqm	376	7896.00
M6	Providing and laying P.C.C. 1:4:8, in foundation pits for columns, rafts, walls, steps, trenches under plinth/tie beams, bottom of drains, compacted earth / sand base in floor bed or pavement or wherever required as directed etc. (Coarse graded aggregate 20mm and down gauge).	1	Cum	6656	6656.00
M7	P.C.C. 1:2:4 in all types of work with cement, sand and stone chips including coarse graded aggregate 20mm and down gauge but excluding formwork and steel	1	Cum	8859	8859.00
M8	Brick work in one or more brick thick in superstructure in Cement mortar 1:6. including necessary scaffolding etc complete.	1	Cum	8598	8598.00

CONTRACTOR

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CHIEF ENGINEER

Item No.	Description of work	Qty.	Unit	Rate (Rs.)	Amount (Rs.)
M 9	Brick work in half brick thick walls in partitions, etc. in Cement mortar (1:4). The partition wall shall be provided with 2 nos 6 mm mild steel bars at every 4 th layer throughout the length & anchored properly to column, cross wall. When the partition work is not touching the soffit of beam or slab, a concrete band 50 mm thick shall be provided over the partition wall with 2 nos 6 mm mild steel bars including necessary scaffolding etc complete. (The concrete band and steel shall be measured and paid separately.	10	Sqm	1045	10450.00
M 10	Providing, bending, binding with binding wires & laying the Ribbed (Tor Steel)/T.M.T./M.S. reinforcement in R.C.C. works as per direction. Rate to include wastage etc.	50	Kg	85	4250.00
M 11	Supplying, fitting and fixing steel rolling shutter profile type with 18BG of approved type , steel lathe section 75mm wide fitted with coil wire spring to necessitate the fitting the required no of CI Pulley on heavy type solid drawn seamless steel tube complete with locking arrangements both inside and outside, specially built up side guide channels including providing a hood for the steel rolling shutter in the room, painting two or more coats of aluminium paint/ synthetic enamel paint over a coat of red lead primer to give an even finish, all complete	5	Sqm	4260	21300.00
M 12	Internal Cement Plaster 1:5, 12mm thick smooth finish to brick / Cement concrete work (excluding R.C.C. slab soffits) including removing /taking out old plaster, if any including scaffolding.	10	Sqm	335	3350.00
M 13	External cement plaster, 18mm thick in cement sand mortar 1:4 in two coats with addition of waterproofing compound in each coat as per manufacturers specification as directed excluding scaffolding	30	Sqm	451	13530.00
	Miscellaneous Total				740114.00
M 14	Prime cost items for providing of Hardware Fittings for door/ windows etc as per requirement or as directed of approved make. The actual cost of hardware fittings purchased shall be reimbursed to the contractor on submission of Original Voucher/cash memo.		L.S.		20000.00
M 15	Fitting and fixing of hardware fittings including all fixing material such as screws, nails, bolts, adhesive etc labour charges and profit & overhead expense. (25 percentage on amount of above item M 14)		25%		5000.00
Sub Total (Rs.)					770114.00
Less : For Prime Cost Items (Tender Item No.M14) (Rs.)					(-) 20,000
Less : For fitting and fixing of hardware fittings (Tender Item No. M15) (Rs.)					(-) 5,000
Civil & Interior works (Rs.)					3450466.90

PART- B: SUPPLY AND INSTALLATION OF FACTORY MADE MODULAR FURNITURE

PREAMBLES TO SCHEDULE OF QUANTITY

Contractor should note that their rates should be inclusive of followings:

- (1) All furniture including pedestal drawer units shall display the "LOGO"/MONOGRAM of the manufacturer.
- (2) All post formed laminate wherever mentioned in the tender shall be of 0.8mm thickness.
- (3) All particle boards/pre laminated particle boards wherever mentioned in the tender shall be INTERIOR GRADE of approved make.

SUPPLY & INSTALLATION OF FACTORY MADE MODULAR FURNITURE FOR PROPOSED MODERNIZATION OF BRANCH OFFICE 92 K AT FIRST FLOOR AND SECOND FLOOR OF BO BUILDING AT KHOPOLI, UNDER THANE DO, MAHARASHTRA					
SCHEDULE OF QUANTITIES					
Modular Furniture					
Item No.	Description of item	Qty.	Unit	Rate (Rs)	Amount (Rs)
	Note: The following specifications are common for all work stations: Fabrication, supply and installation of factory made modular work stations with M.S. Frame, Tile based partition system and all accessories as per the technical specifications. All knock down hardware to be suitable for particle board / M.S. sheet fixity complete as per drawing and as directed.				
	Fabrication, Supply and installation of factory made modular work stations with Tile based partition system and all accessories as per the technical specifications. All knock down hardware to be suitable for particle board / M.S. Sheet fixity, complete as per drawing and as directed.				
	NOTE: All particle boards / pre laminated particle boards shall be of INTERIOR GRADE of approved make.				
1.0	MODULAR PARTITION :				
	Fabrication, supply & installation of tile based free standing partition of ht. 1200 mm (approx.) and 65mm thick (minimum) including top trim, end trim, corner filler, adjustable glide screws, top hinged race ways, cover plate, etc. complete for the following type of partition and consist of the following:				
a)	Modular partition frame made out of cold roll formed of powder coated M.S. sections, 16 gauge for core frame & intermediate members. The core frame consists of a rectangular frame fixed with nut & bolt to horizontal sections to form a rigid structure. All M.S. and C.R.C. components shall treated with 7 tank galvanized process & finished with min. 50 micron thick powder coating of approved shade. Each frame supplied with levelling bolts with knurling/fiber knob which allows 25 mm adjustment. The size of the partition will be as specified in the drawings.	39	Sqm	5672	221208.00

b)	Skirting: Minimum 100 mm high skirting top hinged panel cover of M.S. sheets and finished in approved shade powder coating of minimum 50micron.				
c)	Raceways: Concealed raceway above work-station top for transporting wires, cables and conduits with tophinged flap out of MS powder coated sheets. The bottom raceway shall be concealed at skirting panel and will have wire carrier hangers and no horizontal member at the floor level.				
d)	Top Trims & End trims: Shall be of extrudedaluminum sections of shape and finished withapproved shade powder coating. Caps & Corner filler: Shall be of ABS filler Caps which should match very closely to the color of top cap and end trims.				
e)	Tile Panel: Tiles shall be fixed with flush to the partition consisting of the following: i) M.S. Sheet: - 24 gauge M.S. sheet powder coated of minimum 50 microns tile to be fixed at below the table at inner side of partition.				
	ii) Pre-laminated participle Board: - Pre laminated Particle Board (O.S.L.) tiles 12 mm thick of Interior grade conforming to IS: 12823 fixed on external visible faces of work-station partition. The pre laminated particle board tiles shall have sufficient number of clips. iii) Glass Panel: - 4 mm clear sheet glass on both side of modular partition shall be payable separately. iv) Edges: - All the edges shall be finished with hot pressed PVC lipping of matching shade.				
f)	The partitions should have a minimum of 9 kg steel per Sq.mt. of partition frame. The steel should be manufactured by SAIL/TISCO/JINDAL/RIN Ltd./ESSAR STEEL. The supplier of furniture should submit proof of purchase of steel from the manufacturers and test certificates as well. All metal surface shall be powder coated in approved shade.				

Item No.	Description of item	Qty.	Unit	Rate (Rs)	Amount (Rs)
2.0	DO....as above Tender Item No. 1.0 but shall be fixed with Pre laminated Particle Board (O.S.L.) tiles 12 mm thick of Interior grade at below the table at on both sides of partition.	39	Sqm	4912	191568.00
3.0	Extra payable for providing and fixing 4 mm thick plain clear sheet glass fixed on both sides of modular partition at above of concealed raceway on above of work station table with sufficient number of clips, gasket , etc. completed as directed. (one side Glass area will be measured for payment)	1	Sqm	578	578.00
4.0	WORK STATION TOP AND GABLE END :				
	Providing and fixing work top of following sized and shall consist of following including powder coated M.S. Brackets and fixed to modular partition.				
	Top : Work station top made out of 25mm thick pre-laminated particle board of Interior Grade with front edge in half round mould (post formed section) supported on M.S. frame & Brackets.				
	Finish: Top finished in Post formed 0.8 mm thick laminate of approved shade. The bottom finished with balancing laminate of 0.8 mm thick.				
	Edge : All other edges finished with matching to top finish with 2 mm PVC lipping.				
	Providing and fixing 50 mm dia. Gourmets for cable entry at the specific location after drilling hole of required size in the work station top withABS cover.				
	Size 1500mmX1500mm X 540mm “L” shapework station.	18	No	5707	102726.00
	Size 1350mm X 540mm Linear work station.	1	No	3339	3339.00
	Size 1200mm X 540mm Linear work station.	1	No	3012	3012.00
M 5	Providing and fixing Gable End made with 25mm thick interior grade particle board with front edge in half round mould (post-form section) for the following sizes and shall consist of following including powder coated M.S. bracket with fixity to top and partition.				
	Finish: - Finish in Post formed 0.8mm thick laminate of approved shade.				
	Edge: - All other edges finished with matching to top finish with 2 mm thick PVC lipping.				
	Size 515X722mm Gable End.	35	No	1870	65450.00
	Size 475X722mm Gable End.	2	No	1820	3640.00

Item No.	Description of item	Qty.	Unit	Rate (Rs)	Amount (Rs)
6.0	PEDESTAL DRAWER UNIT & ACCESSORIES :				
	Fabricating, supply & placing in position Mobile pedestal drawer unit of following sizes and shall consist of following and with anti toppling device when all drawers are open.				
	Carcass: - Shall be of 0.8mm thick M.S. sheet, treated with 7 tank Galvanized process and finished with powder coating of approved shade & thickness of 50 microns.				
	Drawer :- 2 Nos. of drawers & 1 no. filing drawer (right hand side) made out of 0.6 mm thick M.S. sheet, treated with 7 tank Galvanized process and finished with powder coating of approved shade & thickness of 50 microns. The drawers shall be mounted on 2 nos. telescopic channels for smooth operations.				
	Locks: - The units shall have central locking (7 lever) lock in front with hinge key in two sets.				
	Handles: - The units shall have M.S. pressedconcealed handles to every drawer.				
	The unit shall have 4 nos. glide screws with height Adjustment of +/- 10 mm.				
a)	Size - 450mm x 515mm x 725 mm (height)	2	No	6011	12022.00
b)	size - 380 mm x450 mm x725mm (height)	46	No	5768	265328.00
	MISCELLANEOUS ACCESSORIES				
7.0	Supply & fixing of "INNOFITT " or any other equivalent make acrylic Key board Tray of size 580 X380mm with sliding channel on both sides and in-built sliding Mouse pad tray (LHS/RHS) as per the approved sample.	36	No	1518	54648.00
8.0	Extra payable for providing Fabric panel (non tackable type) in lieu of pre laminated particle board panes in partition mentioned in item no.1 above. The non tackable tiles shall be made of 0.6 mm thick G.I. sheet with an inlay of 10 mm thick Polyurethane foam having density of 20 Kg/Cu.M. Fabric shall be with fire retardant coating and scotch guard for stain resistance glued to the G.I. sheet. The basic price of fabric Rs.300/R.M. (The actual fabric panel on each side shall be measured for payment.	10	Sqm.	522	5220.00
9.0	Extra payable for providing Fabric panel (tackable type) in lieu of pre laminated particle board panes in partition mentioned in item no.1 above. The tackable tiles shall be made of 0.6 mm thick G.I. sheet with an inlay of 10 mm thick cross lone foam having density 50-60 kg/Cu.M. Fabric shall be with fire retardant coating and scotch guard for stain resistance glued on G.I. sheet. The basic price of fabric Rs.300/R.M. (The area of actual fabric panel shall be measured for payment.	10	Sqm.	546	5460.00

Item No.	Description of item	Qty.	Unit	Rate (Rs)	Amount (Rs)
	MISCELLANEOUS ACCESSORIES				
10.0	Providing and Fixing Metallic Pencil Tray for Development Officers of "INNOFITT" / "ebco" make, Powder coated of min. 50 micron, size of pencil tray shall be 450mm x 450mm x70xmm (deep) including providing and fixing with telescopic channels etc. all complete as directed.	10	No	2732	27320.00
11.0	Fabricating, Supplying & placing in position below work station movable type M.S. Powder coated CPU trolley of size 230mmx270mmx150mm for placing any size of CPU unit, made out of 16 SWG M.S. sheet with 4 no's of lockable type castors etc. complete.	39	No	704	27456.00
	FREE STANDING TABLE & ACCESSORIES				
12.0	Supplying of factory made free standing table unit consists of the following :				
	Top : Table top shall be of 25mm thick Particle Board in one piece with front edge in half round Post formed moulding, finished with 0.8 mm thick approved laminate including Mini fixing joinery.				
	Gable Ends : 2 Nos. shall be of 25mm thick Particle Board in one piece with front and rear edge in half round Post formed mould with				
	leveling bolts which allow 25 mm adjustment, finished with 0.8 mm thick laminate.				
	Modesty Panel : shall be of 18mm thick Pre-laminated particle board in one piece with levelling bolts which will allow 25 mm adjustment including making provision for wire management and fixation of switches /sockets.				
	Providing and fixing 40mm dia. Gourmets at the specified location after drilling hole of the required size in the work station top with ABS cover.				
	Edges: All other edges of tables shall be finished with matching colour to top finish with 2mm thick PVC hot pressed lipping and other half round post formed moulding.				
	Finish : Shall be finished in post formed with 0.8 mm thick laminate of approved shade.				
a)	Size - 1800 x 900 x 750 mm (height)	1	No	11658	11658.00
b)	Size - 1500x750x750 mm (height)	6	No	9108	54648.00
c)	Size 1350x600x750 mm (height)	10	No	8440	84400.00
d)	Size 900x500x750 mm (height)	1	No	6250	6250.00

Item No.	Description of item	Qty.	Unit	Rate (Rs)	Amount (Rs)
13.0	Providing, supplying & placing in position the credenza unit consisting of following :				
	Factory made modular MS powder coated storages, the sides, top, bottom shall be made of 22 gauge MS sheets of required size. treated with 7 tank Galvanized process and finished with powder coating of approved shade & thickness of 50 microns. The members shall be without any burrs and dents.				
	1 no. Intermediate shelf shall be made of 22 gauge MS sheet. treated with 7 tank Galvanized process and finished with powder coating of approved shade & thickness of 50 microns. Shelf shall have lipped flanges 25 mm in width and 15 mm in depth . Four rack strips of not less than 1.0 mm thick shall be provided for supporting the shelf.				
	Sliding type shutters shall be made of 22 gauge MS Sheets treated with 7 tank Galvanized process and finished with powder coating of approved shade & thickness of 50 microns. with provision of sufficient stiffness by providing metal stiffener. The doors shall be provided with handle and 2 way locking system with duplicate keys of non-corrodible material. The door handle and lock shall be of approved make.				
	Each unit shall be supplied with level adjuster which allows 25 mm height adjustment with necessary hinges of approved quality.				
	All dents, burrs and sharp edges shall be removed from the various components and finished with powder coating of 50 micron of approved shade & colour by engineer in charge.				
	Top of the credenza unit shall be provided with 25 mm thick pre-laminated post formed particle board moulding at front edge, all the other three edges of which shall be provided with 2 mm thick PVC edge lipping. The shades and colour of laminate and PVC lipping shall be as approved by Engineer-in-Charge.				
a)	Size - 1050 mm x 450 mm x 722 mm (height)	2	No	8358	16716.00
b)	Size - 900 mm x 450 mm x 722 mm (height)	16	No	7165	114640.00
c)	Size - 1500 mm x 450 mm x 722 mm (height)	1	No	11576	11576.00

Item No.	Description of item	Qty.	Unit	Rate (Rs)	Amount (Rs)
14.0	Providing, supplying and placing the low height storage unit of size - 900 mm x 450 mm x 1200 mm (height) (approx.) or part thereof (wherever required) as per following:	37	Sqm	11537	426869.00
	Factory made modular MS powder coated storages, the sides, top, bottom shall be made of 22 gauge MS sheets of required size treated with 7 tank Galvanized process and finished with powder coating of approved shade & thickness of 50 microns. The members shall be without any burrs and dents.				
	2 nos. Intermediate shelves shall be made of 22 gauge MS sheet, treated with 7 tank Galvanized process and finished with powder coating of approved shade & thickness of 50 microns. Shelves shall have lipped flanges 25 mm in width and 15 mm in depth thick Each shelf shall be supported on four adjustable shelf brackets made of steel sheeting not less than 1.6 mm thick. Four rack strips of not less than 1.0 mm thick shall be provided for supporting the shelves, covering the full height of the cabinet. One 'C' shape Channel (25 mm x 15 mm) of same material is to provide under the shelves to rigidity , this intermediate 'C' shape channel provided on longer direction of below of each shelves.				
	Front Doors shall be side hung made of 22 gauge MS sheet treated with 7 tank Galvanized process and finished with powder coating of approved shade & thickness of 50 microns, with provision of sufficient stiffness by providing metal stiffener. The doors shall be provided with handle and 2 way locking system with duplicate keys of non-corrodible material. The door handle and lock shall be of approved make.				
	Each unit shall be supplied with level adjuster which allows 25 mm height adjustment with necessary hinges of approved quality.				
	All dents, burrs and sharp edges shall be removed from the various components and finished with powder coating of 50 micron of approved shade & colour by engineer in charge.				
	Top of the storage unit shall be provided with 25 mm thick pre-laminated post formed particleboard moulding at front edge, all the other three edges of which shall be provided with 2 mm thick PVC edge lipping. The shades and colour of laminate and PVC lipping shall be as approved by Engineer-in-Charge.				
TOTAL AMOUNT FOR MODUALR FURNITURE (Rs.)					1744794.00

PART – C: SUPPLY OF CHAIRS

SPECIAL CONDITIONS FOR PROVIDING AND SUPPLYING STEEL FRAMED AND CUSHIONED, MESH BACK / MOULDED CHAIRS

1. The rates quoted shall be inclusive of all applicable taxes / duties levied by the State/Central Government/Local Bodies including Octroi but exclusive of GST. No reimbursement, whatsoever, shall be made to the contractors on account of any taxes or duties or increase in the taxes/duties by act of any legislation.
2. The rates quoted shall be inclusive of Packing Charges, Transportation, etc., supplying and delivery and installation at Site.
3. Modular Furniture / chairs shall be manufactured at ***Business and Institutional Furniture Manufacturer's Association (B.I.F.M.A.), India*** approved / enlisted manufacturers. L.I.C. reserves the right to inspect during the period the Furniture pertaining to L.I.C. are being manufactured. The contractor has to facilitate inspection during the manufacturing.
4. Before executing the supply order, the contractor may have to produce prototype of all different items of Modular Furniture to be provided in the work for approval of Chief Engineer without any extra cost. The rates quoted shall include for the same. The approved samples will form a part of the total supply.
5. During the execution of work, i.e. fabrication of furniture items at contractor's workshop wherever it is located, the Corporation's Engineer may visit and inspect the work at any point of time. The contractor shall arrange for such inspection and co-operate with the Corporation's Engineer.
6. All the furniture supplied shall be got approved by LIC and the contractor shall replace the defective furniture immediately.

SPECIFICATION FOR CHAIRS

1. The contractor shall inspect the site to ascertain the nature and scope of work.
 - a) The quantities given are provisional and likely to vary.
 - b) The guarantee period shall be **TWO YEAR** after the date of supply of chairs. Guarantee shall cover all parts except fabric. In case of defects during the guarantee period the defects shall be rectified free of cost. Guarantee shall be on stamp paper by the contractor and manufacturer jointly.
 - c) Welding done for stand and other parts shall be done by electric welding with approved welding rods of 12 gauges.
 - d) Unless otherwise mentioned, handles shall be one piece Injection moulded from black Co- polymer Polypropylene (PP handles).
 - e) **Foam:** Unless otherwise mentioned, chair cushion for seat shall be made up of High Resilience (HR) polyurethane foam moulded to have consistent density of around 55 kg/cum (+/-2) and hardness load 16kgf (± 2) as per IS:7888 for 25% compression.
 - f) **Castor:** Heavy duty, non skid, twin wheel, injection moulded in Black Nylon.
 - g) **Revolving & Tilting:** Unless otherwise mentioned, Gas lift with 110mm adjustment of seat height along with a 360 degree swivel mechanism with tilting mechanism. The pneumatic operated mechanisms are mild steel powder coated with an additional M.S. galvanized rod.
 - h) PVC profile shall be provided by stapling for seat.
 - i) **Hardware:** All hardware should be of ISI quality.
 - j) **Upholstery:** The approved colour, texture, design and manufacturer of fabric shall be used.
 - k) **Stand:** Unless otherwise mentioned, stand shall be of 10 to 12 gauge M.S. sheet, properly welded with powder coating of minimum 50 microns.
 - l) **Adhesive:** Fevicol SR – 505, synthetic rubber adhesive shall be used for fixing of various items for chairs.
 - m) **Fabric:** It shall be polyester fabric net for seat and polyester net of high tenacity yarn for back cost as mentioned in the schedule of Chairs. (purchase bill to be submitted)
 - n) 12+/-1 mm thick hot pressed plywood shall be used for seat.
 - o) Pipes for chairs shall be M S ERW tube of dia 2.54 ± 0.03 cm x 0.2 ± 0.016 cm thick.
 - p) One sample of each chair shall be delivered after taking the acceptance letter.

List of Equivalent Models		ANNEXURE-"B"		
Item No.	Description of Chair	M/s Godrej & Boyce Mfg. Co. Ltd.	M/s Methodex Systems Ltd.	M/s Mansarover Industrial Corporation
1	Providing & Supplying of High Back chair with, Steel Frame as per specifications mention in schedule : (For SDMs)	PULSAX+PULSNR	-	MIC 301
2	...Do... as item no. 1 above but the Back assembly is made of powder coated (50 microns minimum) MS ERW tubular frame of dia 2.54 (+/-0.03)cm x 0.2(+/-2) 0.016cm thick as per specifications mention in schedule: (For MM/DM/ADM/SBM / BM (I/C)/ V C room/ conference room)	7501 RG	MELUHA-HB	MIC 306
3	...Do...as item no. 2 above but for Medium Back chairs with steel frame as per specifications mention in schedule: (For AO / AAO / HGA / Asst / RC & Other Staff/ conference hall)	7502 RG	MELUHA-MB	MIC 313
4	'---Do-- as item no. 2 but medium back Chair with steel frame and one piece armrest injection moulded in back & fixed with tubular cantilever type frame made of 25.4(+/-0.3) mm dia, x 2 mm (+/- 0.16mm) thick, MS ERW tube with powder coated as per specifications mention in schedule : (For Visitors)	7512 RG	MELUHA-Vi	MIC 321

PREAMBLES TO SCHEDULE OF QUANTITIES

	Note : The following Terms & Conditions are common for all items and Rates quoted shall be inclusive of the same :
a)	All furniture shall display the “Logo” / “Monogram” of the Manufacturer /Supplier.
b)	Before executing the supply order, the vender is required to produce prototype of all different chairs to be provided for the above work without any additional cost for Chief Engineer’s approval.
c)	Sample of chairs made shall have to be got inspected either at vendors’ show room / manufacturer’s assembly place/provided at Western Zonal Office, Engineering Department, Mumbai before taking up manufacturing of entire lot. If any correction or amendment in type / design is required, the same shall be incorporated without any extra cost.
d)	The department shall be at liberty to dismantle any part / component or to cut sample at any place for checking / verification of quality of material used. The sample may be sent for testing in the laboratory to confirm the quality as per IS 7888. The expenditure shall be borne as per tender Cl.no:4 of BID III, (Part –B) Financial bid.
e)	The equivalent model of various chairs are mentioned in Annexure “B” attached with the Schedule of Quantity are for reference and pattern/design of chairs. Contractors are requested to ensure that the chairs supplied are of similar to the models mentioned in the tender and description of item of various chairs and quote the rates and supply chairs accordingly.

TESTING OF MATERIALS:

Sr.No.	Materials	Test	Frequency
1	CHAIRS	<u>Polyurethane Foam: Seat</u> a) Thickness, mm b) Density, Kg/m³ c) Hardness, on Hamden Machine at 25% Compression <u>Polyurethane Arm Rest</u> a) Hardness (Shore A) <u>M.S. Black Powder Coating of Tube</u> a) Stroke Length, mm b) Pressure force applied 450N <u>Fabric / Mesh</u> a) Colour fastness to light b) Colour fastness to rubbing c) Tear Strength <u>Hydraulic Cylinder</u> Pressure Testing	One test of each type of chair where tender qty. is more than 50 chairs.

SCHEDULE OF QUANTITIES					
S.NO.	Description of Item	QTY.	UNIT	Rate	Amount
1	Providing & Supplying of High Back chair with, Steel Frame and as following :	2	Nos.	8611.00	17222.00
	Seat size –470(W)X470(D)x60(T) mm minimum.				
	Back Size –460 (W) X 580(H) mm minimum				
	(For MM/DM/ADM/SBM / BM (I/C)/ V C room/ conference room)				
	Seat assembly:				
	It shall be made of 12+/-1mm thick hot pressed plywood & moulded polyurethane foam with density of 45 Kg/Cum (+/-2) and hardness 16Kgf(+/-2) as per IS : 7888 at 25% compression and shall be upholstered with polyester fabric net.				
	Back assembly :				
	The Back assembly is made of powder coated (50 microns minimum) MS ERW tubular frame of dia 2.54 (+/-0.03)cm x 0.2(+/-0.016cm) thick.				
	Armrest : (Fixed)				
	The one piece armrest of diamond / rectangular / elliptical shape or any other approved shape are made of black Co-polymer polypropylene. The armrest shall be scratch proof & weather resistant. Armrests are fitted to the seat with powder coated armrests bracket made of 5mm thick HR Steel.				
	Fabric for Seat :				
	It shall be of upholstered with polyester fabric net. It shall be as per LIC approved colour & pattern. The fabric net shall be tested for colour fastness and wear & tear. (Basic cost of fabric net shall be of Minimum @Rs. 160/- per metre)				
	Fabric for Back :				

	It shall be of net with high tenacity yarn as per LIC approved colour & pattern. It shall be tested for colour fastness and wear & tear. (Basic cost of polyester Net of high tenacity yarn shall be of Minimum @Rs. 160/- per metre)				
	Tilting & Revolving Mechanism:				
	The adjustable central tilting system shall be designed for 17 degree max. tilt. The tensions shall be adjustable. It shall be provided with upright locking system. A full 360 degree swivel mechanism shall allow for fluid lateral movement.				
	Gas lift:				
	The gas lift shall be maintenance free, environment friendly, chrome free cylinder tube fixed in a M.S. black powder coated central column tube 38mm dia & 2.0mm thick of 100mm (+/-3) stroke length & gas pressure of 450 N force.				
	Pedestal assembly :				
	The pedestal shall be made of arc shaped CRC metal folded base with 2.3 mm thick steel strips and fitted with 5 nos. twin wheel pin castors of min. wheel dia. 50 mm. The 5 prongs shall be welded to a central bush made for 2.5 mm thick ERW steel tube with 54 mm OD and 50 mm length. The bush shall accommodate the housing of the gas lift. Diameter of CRC metal base shall be 660 mm with 5 pronged legs duly powder coated having powder coating thickness 50 to 60 microns. The pedestal shall be covered with ABS moulded cover for modern and aesthetic looks.				
	Telescopic bellow assembly :				
	The bellow shall be 3 piece telescopic type and injection moulded in black Polypropylene.				
	Twin wheel castors :				
	The twin wheel castors shall be injection moulded in black nylon & extra smooth.				
	Powder coating :				
	All the steel components shall have epoxy polyester powder coating with dry film thickness of 50 microns (min).				

2	...Do...as item no. 1 above but for Medium Back chairs with steel frame and as following .	42	Nos	7531	316302.00
	Seat size – 470 (W) X 470 (D)x 60(T) mm minimum				
	Back Size - 460 (W) X 500 (D) mm minimum				
	(For AO / AAO / HGA / Asst / RC & Other Staff/ conference hall)				
3	---Do-- as item no. 1 but medium back Chair with steel frame and one piece arm rest injection moulded in back & fixed with tubular cantilever type frame made of 25.4(+/-0.3) mm dia, x 2 mm (+/-0.16mm) thick, MS ERW tube with powder coated and as following :	47	Nos	6630	311610.00
	Seat size – 470 (W) X 460 (D) x 60(T) mm minimum.				
	Back Size - 460 (W) X 420mm (D) mm minimum.				
	All the steel components shall have epoxy polyester powder coating with dry film thickness of 45 microns (min).				
	(FOR VISITORS)				
	TOTAL			Rs.	645134.00

PART D – ELECTRICAL WIRING INSTALLATION WORK

(BRANCH – 92 K)

S.No	DESCRIPTION	Qty	RATE	Unit	Amount
1	CUBICLE PANEL				
	Supplying installation testing and commissioning of Sleek type cubical panel 300 mm deep fabricated out of 16 SWG sheet steel and suitable frame work having independent compartments for MCCB's/ MCB's etc. The panel shall be wall/floor mounted it should be degreased, anti rust treated with two coats of red oxide primer and finished with two coats of enamel spray paint. The panel shall have ventilator slots covered with wire mesh from inside. The panel door shall be inter locked with switch gears and have neoprine gasket. The design of the panel shall be such as to offer maximum safety and ease for maintenance as per the requirement of MSEB. The BusBars shall be tinned copper and supported on non inflammable.				
	Epoxy cast iron resin insulators. The terminations of cable/ wire shall be from top or bottom front connection as per site requirement with cable end plate. Engraved name plates shall be provided for each feeder cubical panel shall consist of following switch gears including copper leads of suitable size depending on the capacity of switch gears between busbars and switch gears (All MCBS Shall be of ` C' Series) . Before fabrication of the panel the drawing shall be got approved from LIC Engineer)				
(A.)	Floor Panel	1	139978	Each	139978.00
	1 no. 250 A , 36 KA FP MCCB incomer With thermal release				
	1 No. 100 A 4P 25 KA MCCB (incomer for AC busbar)				
	2 no. 100 A , 25 KA FP MCCB incomer (For APFC Panel and for Light Paenel))				
	2 No. 63 A 4P MCCB (UPS & spare)				
	1 No. 100A 4P online changover switch				
	4 No. 63 A 4P MCB (duct AC and spare)				
	6 No. 40 A DPMCB				
	1 set of copper bus bar (4 nos.) of size 30 x 6 mm(suitable length as per design) on epoxy resin insulators complete with incoming and outgoing connections, earthing etc....Bus bar-1 (Main Bus Bar)				
	Copper bus bar(1 nos.) of size 25 x 3mm(Earth Bus Bar -1) at the bottom in cable tray including connections				

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S.No	DESCRIPTION	Qty	RATE	Unit	Amount
	1 set of copper bus bar (8 nos.) of size 25 x 5 (suitable length as per design) on epoxy resin insulators complete with incoming and outgoing connections, earthing etc....Bus Bar-2 (for AC and light panel)				
	Copper bus bar(1 nos.) of size 25 x 3 mm (Earth Bus Bar-2) at the bottom in cable tray including connections				
	1set of pilot lamp for R,Y,B phases				
	Multifunction meter				
	Interconnecting Leads				
B.	SITC of 250A 36 KA four pole MCCB with metal enclosure complete in all respect.	1	23500	Each	23500.00
C.	UPS Panel	1	37700	Each	37700.00
	1 no. 63 A , 25 KA FP MCCB incomer With thermal release				
	2 No. 40 A 4P MCB (for UPS input)				
	3 No.40 A DP MCB (for UPS input spare etc)				
	1 set of copper bus bar (4 nos.) of size 25x 3 mm on epoxy resin insulators complete with incoming and outgoing connections, earthing etc....Bus Bar-1				
	Copper bus bar(1 nos.) of size 15 x 3 mm (Earth Bus Bar-1) at the bottom in of panel including connections				
	Interconnecting Leads				
D	APFC Panel	1	84400	Each	84400.00
	Supply installation testing & commissioning of modular design (fuse less) 2mm thick CRCA sheet steel cubicle panel with different compartment with following rating of KVA suitable for 415/440 V as stated at (A). Panel should have digital PF meter, reactor protected APFC relay having 08 stages with three CT controller, suitable for operation with non linear load up to 30% with Three CT controller. The panel shall be consisting of following and should be ready for operation. Panel shall be designed to work automatically & manually both. Contractor shall have to arrange necessary foundation for grouting of panel & nothing shall be paid extra. Panel should have cooling fan with external louvers .Necessary CTs of suitable rating should also be provided.				
	MPP Heavy duty Box type L&T make or equivalent power factor capacitor bank.				

S.No	DESCRIPTION	Qty	RATE	Unit	Amount
	20 Amp 10kA MCB for 1-10 KVAR, contactor MO C10 for 10 &, MO C5 contactor for 5 KVAR , MO C3 contactor for 1-3 KVAR as stated below.				
	Different rating ranging from 1 KVAR to 15 KVAR as per I.S 2834 heavy duty metalised poly-propylene type box type capacitors. (1X1 KVAR+ +2x2 KVAR+3x5 KVAR + 2x10KVAR KVAR = 40)				
	Power transformer/current transformer of suitable rating.				
	ON/OFF Auto / manual switch for each of the capacitor bank.				
	APFC relay for 8 stage for 3 CT's controll etc. (Auto/ manual)				
	ASS, VSS, Flush mounted Ammeter & voltmeter (Digital) for indication.				
	Indicating lamps (LED type)				
	Copper bus bar of 4Nos. 20 mm X 5 mm& suitable length.				
	40 KVAR panel with 100 Amp 4P, MCCB thermal release type as incommmer etc complete as specified above .				
2	CABLES (Main and submains)				
	Supply, Installation, Testing & commissioning of aluminium / copper XLPE armoured cables fixed to walls, ceilings or laid in ready-made trench as follows:				
a	Providing and laying 3.5 core 95 sq.mm. XLPE/PVC insulated Aluminium Conductor 1.1. KV Grade Armoured cable on wall / surface etc. complete with 2 nos. 8 SWG GI earth wire etc. complete. (incomig cable)	40	883	RM	35320.00
b	Providing and laying 3.5 core 35 sq.mm. XLPE/PVC insulated Aluminium Conductor 1.1. KV Grade Armoured cable on wall / surface etc. complete with 2 nos. 8 SWG GI earth wire etc. complete.	10	505	RM	5050.00
c	Providing and laying 4 core 10 sq. mm. XLPE/PVC insulated Copper Conductor 1.1. KV Grade Armoured cable with 1 No. 12 SWG Copper Earth Wire on wall / surface etc. complete.	75	733	RM	54975.00
d	Providing and laying 3 core 10 sq. mm. XLPE/PVC insulated Copper Conductor 1.1. KV Grade Armoured cable with 1 No.12 SWG Copper Earth Wire on wall / surface etc. complete.(for UPS DB)	75	606	RM	45450.00
e	Providing and laying 3 core 6 sq. mm. XLPE/PVC insulated Copper Conductor 1.1. KV Grade Armoured cable with 1 No.12 SWG Copper Earth Wire on wall / surface etc. complete. (for light and raw db)	90	419	RM	37710.00

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S.No	DESCRIPTION	Qty	RATE	Unit	Amount
f	Providing and laying 3 core 4 sq. mm. XLPE/PVC insulated Copper Conductor 1.1. KV Grade Armoured cable with 1 No.12 SWG Copper Earth Wire on wall / surface etc. complete.	10	333	RM	3330.00
g	Providing and laying 3 core 2.5 sq. mm. XLPE/PVC insulated Copper Conductor 1.1. KV Grade Armoured cable with 1 No.12 SWG Copper Earth Wire on wall / surface etc. complete.	10	277	RM	2770.00
3	Supplying and making end termination with brass compression gland and aluminum lugs for following size of aluminum cable				
a	3.5 core 95 sqmm	2	515	Set	1030.00
b	3.5 core 35 sqmm	2	323	Set	646.00
c	4 core 10 sqmm	6	236	Set	1416.00
d	3 core 10 sqmm	6	225	Set	1350.00
e	3 core 6 sqmm	12	180	Set	2160.00
f	3 core 4 sqmm	2	150	Set	300.00
g	3 core 2. 5 sqmm	2	100	Set	200.00
4	DISTRIBUTION BOARDS				
a	Supplying, installing and commissioning of double Door type SPN MCB DB (IP 43), consisting of 1 No. 40 A ELCB of 100mA sensivity as incoming and 10 Nos. SP MCB 10KA as outgoing. Supplying and Fixing of 240 Volts single pole and neutral sheetsteel MCB Distribution Board, on surface on suitable angle iron framework/ wooden board / recess / directly as per site condition etc.complete, with Tinned copper Busbar, Neutral Link, Earth Bar, interconnections, including painting, earthing with above MCB's fixed on it, including connections etc.as required. (For Lighting & raw power Circuits)	3	8611	Each	25833.00
c	Supplying, installing and commissioning of Double Door type SPN MCB DB, consisting of 1 No. 32 Amp. DP MCB 10KA as incoming and 08 Nos. 10A/16A SP MCB 10KA as outgoing. Supplying and Fixing of 240 Volts single pole and neutral sheetsteel MCB Distribution Board, on surface on suitable angle iron framework/ wooden board / recess / directly as per site condition etc.complete, with Tinned copper Busbar, Neutral Link, Earth Bar, interconnections, earthing with above MCB's fixed on it, including connections etc.as required. (For UPS Point)	3	4525	Each	13575.00

S.No	DESCRIPTION	Qty	RATE	Unit	Amount
d	Supplying, installing and commissioning of double Door type SPN MCB DB (IP 43), consisting of 1 No. 40 A ELCB of 100mA sensitivity as incoming and 8 Nos. SP MCB 10KA as outgoing. Supplying and Fixing of 240 Volts single pole and neutral sheetsteel MCB Distribution Board, on surface on suitable angle iron framework/ wooden board / recess / directly as per site condition etc.complete, with Tinned copper Busbar, Neutral Link, Earth Bar, interconnections, including painting, earthing with above MCB's fixed on it, including connections etc.as required. (For Lighting & raw power Circuits)	2	7388	Each	14776.00
					0.00
i	Supply and fixing 40 amp DP MCB with metal enclosure for UPS & split ACs .	4	1024	Each	4096.00
j	Supply and fixing 63 amp FP MCB with Wheatherproof metal enclosure .	3	3927	Each	11781.00
5	POINT WIRING WITH MODULAR ACCESSORIES				
	Wiring for light point/ fan point/ exhaust fan point/ call bell point/independent plug point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed HMS FRLS PVC Conduit conduit, with modular switch, modular plate, suitable GI box and earthing thepoint with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc. as required				
	Rates quoted below shall be inclusive of cost of providing necessary circuit wiring from DBs to switch boards with 3 x2.5 sqmm. PVC insulated wires multistranded copper conductor in 20 mm dia HMS FRLS PVC Conduit alongwith accessories in Concealed in wall/ wooden partitions & on surface of Beam/ ceiling alongwith accessories ,junction box cover plate etc.				
	Rates quoted shall be inclusive of the cost of necessary chasing for concealing various accessories like conduit and box etc. (Neutral and earth connection with looping back system)				
a	For primary light points/Fan points/Ex fan Points	35	1320	Each	46200.00
b	For Semi - Secondary light points looped from primary point as mentioned above	85	303	Each	25755.00
c	For bell points with Ding-Dong Bell	1	1142	Each	1142.00
d	For Independent 6A plug points with 6A Switch & 6A 3 pin socket (universal) including wiring. (raw power point on work station)	35	1158	Each	40530.00
e	For 6A switch & 6A 3 pin socket on the lighting switch board.	20	243	Each	4860.00
6	Power Points				

S.No	DESCRIPTION	Qty	RATE	Unit	Amount
	Point wiring for Power Points with conduits 25mm / 20mm (including), heavy gauge frls pvc, ISI marked, with requisite wiring as described under with PVC Insulated FRLS Copper Conductors (IS694) with concealed / flush Mounted boxes completed with all accessories like wires, conduits, sockets, MCB's, etc as follows:				
a	For 6A /16A power switch sockets modular type, with 3 Nos of 2.5 sqmm PVC insulated FLRS copper wires (Phase, Neutral & earth) from DB including providing & fixing 6 pin 6 /16 A socket & 16 A switch	2	2924	Each	5848.00
b	For 6A /16A power switch sockets modular type, with 3 Nos of 2.5 sqmm PVC insulated FRLS copper wires (Phase, Neutral & earth) from DB including providing & fixing 6 pin 6 /16 A socket & 16 A switch (Looped from above)	2	1478	Each	2956.00
c	For Power points controlled with 20A/25A SP MCB & wired with 2 Nos of 4.0 sqmm & 1 No. of 4 sqmm PVC insulated FRLS copper wires (Phase, Neutral & earth) from DB & housed in standard manufacturers powder coated enclosure (i.e in modular box with modular plate). (AC point)	1	3582	Each	3582.00
7	FITTINGS & FIXURES				
a	Supply, installation, testing & commissioning of 30 Watt (minimum 120 lumens per watt is required) recess/surface mounted LED luminaire with complete diffuser , holders, connectors of ceiling suspension mounting flush with the ceiling with mounting shackles / chains complete as required. Cat Ref :RC380B LED 30S-6500 G6L60W60 PSU OD philips or equivalent make.	50	3156	Each	157800.00
b	Supply, installation, testing and commissioning of 15 W Down lighter LED light fitting, round shape with driver connector, suitable for the false ceiling with proper supports complete as required. The quoted rate shall be deemed to be inclusive of necessary wiring with 3 core 1.5 sqmm. PVC insulated copper conductor chord for interconnections as required. Cat Ref DN296B LED15S-6500 PSU WH philips or equivalent make,	25	1412	Each	35300.00
c	Supplying, installing, testing and commissioning of 300 mm metal body Exhaust fan on existing wooden framework required as per site condition, incl. connections by means of 3 x 1.5 sq.mm PVC insulated copper wires, etc. complete, as directed.	6	2297	Each	13782.00
d	Supply, Installation, testing & commissioning of 20 Watt FTL LED Lamp type fitting (4 feet) with tube rod with driver etc. The fitting shall be fixed by using wooden round block, ball socket, down rod, screws etc. The conection from point outlet	20	644	Each	12880.00

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S.No	DESCRIPTION	Qty	RATE	Unit	Amount
	to fitting shall be made by using 3 core 1.5 sq.mm. copper conductor PVC insulated flexible cable. Cat Ref : BN021C LED22S PSU C GR Philips or equivalent make.				
e	Providing & fixing of 1400 mm sweep high speed, white colour, Double ball bearing ceiling fan of approved make complete with connections by means of 3 x 1.5 sqmm PVC insulated copper wires.	20	2300	Each	46000.00
f	Supplying and fixing two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	20	323	Each	6460.00
g	Providing & fixing of fan hooks S type 12mm dia rods, shall be fixed to the reinforcement of the ceiling after breaking the slab and making good the surface to the original finish for ceiling fans complete.	20	200	Each	4000.00
8	COPPER EARTHING				
(a)	Supplying and providing earthing station with 600 x 600 x 3 mm thick copper plate with 1 no.of 25X3 mm copper strip connected to the plate by means of brass nuts & bolts brought in 20mm GI pipe and to be burried 2.7 meters below ground level with required quantity of charcoal, salt, etc. including arrangement for watering with separate 20 mm dia GI pipe, funnel CI chamber cover of size 400mm x 400mm with hinges and locking arrangement and brick masonry chamber of size 400x400x400mm. The earth pit shall be atleast 2.0 mters. away from foundation. The entire work shall be carried out as per IS 3043 with its latest version.(The flat above ground level shall be paid for separately)	1	12134	SET	12134.00
(b)	Providing continuous earthing conductor with 2x16 sq mm insulated Copper flexible cable in suitable size PVC pipe to be fixed on surface of wall / beam / column / ceiling by means of M.S. clamps, G.I. Spacers and/or to be laid underground by breaking of pavement, concrete, and making good the surface etc. all complete with end terminations by using lugs, brass nut-bolts etc. as required..	5	430	RM	2150.00
(c)	Supplying & fixing of 25X3 mm copper earth strip, fixed properly with saddles etc	10	680	RM	6800.00
9	G.I. PIPE EARTHING				
(a)	Supplying and providing earthing station with 40 MM G.I. pipe with 2 no.of 8 SWG. G.I. wires connected to the plate by means of brass nuts & bolts brought in GI pipe and to be burried 2.7meters below ground level with required quantity of charcoal, salt, etc. including arrangement for watering with separate 20 mm dia GI pipe, funnel CI chamber cover of size	1	6552	SET	6552.00

S.No	DESCRIPTION	Qty	RATE	Unit	Amount
	400mm x 400mm with hinges and locking arrangement and brick masonry chamber of size 400x400x400mm. The earth pit shall be atleast 2.0 mtrs. away from foundation. The entire work shall be carried out as per IS 3043 with its latest version.				
(b)	Supplying & laying of 2 runs 8 SWG bare G.I. wires in 15 mm "B" class G.I pipe to be laid underground / to be fixed on surface of wall/beam with M.S. clamps	20	251	RM	5020.00
10	Supplying and fixing of ISI HMS FRLS PVC conduit concealed in wall / inside wooden partitions / floor or on surface of ceiling / beam etc. with spacers and saddles etc. and making good the same.				
(a)	32mm	75	161	RM	12075.00
(b)	25mm	250	127	RM	31750.00
(c)	20 mm	250	112	RM	28000.00
11	Supply and fixing MV Danger notice plate /caution board (200x150 mm) atleast 2 mm thick having inscription in Hindi / English and local language.	1	235	Each	235.00
12	Supplying and providing Telephone Jack system & RJ -11 connector in conceal/surface with modular switch box with double cover switch plate shall be of modular range including connections.	25	392	Each	9800.00
13	Supplying , laying & end termination of 0.5 mm tinned copper conductor unarmoured telephone wire in existing pvc conduit pipe/casing capping already laid complete with incoming & outgoing connections				
a	2 Pair Telephone Cable	200	18	RM	3600.00
b	20 Pair Telephone Cable	50	150	RM	7500.00
14	Supplying and fixing of crone tag block of following sizes in suitable MS box with locking arrangement in the location as directed and terminating the telephone cable				
	50 Pair	1	3085	No.	3085.00
15	Providing wiring for UPS outlet points with FRLS 3 x2.5 sq mm PVC 1100V copper conductor wires in 25mm dia, heavy duty FRLS PVC conduit with accessories run above false ceiling and partitions including supply & fixing 3 Nos. 6A, 5 pin universal socket with 1 No. 16A SP switch with indicator using MODULAR model. Rate to include for concealing the conduit and Switch box in wall/panel Sockets with box to be provided below table and control switches above table or as directed.	15	2485	Each	37275.00

S.No	DESCRIPTION	Qty	RATE	Unit	Amount
16	Providing wiring for UPS outlet points with 3x2.5 sq mm PVC 1100V copper conductor FRLS wires in 25 mm dia, heavy duty FRLS PVC conduit with accessories run above false ceiling and partitions including supply & fixing 3 Nos. 6A, 5 pin universal socket modular with 1 No. 16A SP switch with indicator with Modular switch,socket , box accessories. etc.for the following. . Rate to include for concealing the conduit and switch box in wall Sockets with box to be provided below table and control switches above table or as directed. (Loop Point)	28	1280	Each	35840.00
	Note: 1) The above points to be drawn from 1st UPS SB of 2.5 sq.mm wire circuit. Maximum up to 3 extension can be given in work stations. 2) And can drawn directly from DB as directed.				
Total Amount of Electrical Wiring & Installation Works			Rs.	1156257.00	

PART –E DATA CABLING WORK

(BRANCH – 92K)

SR.No	Description of items	Qty	Unit	Rate	Amount
1	Supplying, laying and routing with end termination the UTP- CAT-6 Computer cable of Approved make in the existing already laid conduits, as directed at site & crimping, as per requirements .	1050	RM	30.00	31,500.00
2a	Supplying & fixing & end termintaion of RJ 45 socket & information outlet only suitable for CAT-6 terminal including mounting box (MS) and top cover/face plate, to be fixed in concealed manner in Partition/wall by necessary bolt,nut or directed at site.	40	Each	722.00	28,880.00
2b	Supplying & fixing & end termintaion of RJ 45 socket & information outlet only suitable for CAT-6 terminal including mounting box (PVC) and top cover/face plate, to be fixed in concealed manner in Partition/wall by necessary bolt,nut or directed at site.	5	Each	710.00	3,550.00
3	Supplying & Fixing of company made 2 meter Patch Cord - (Cat- 6)	45	Each	268.00	12,060.00
4	Supplying & Fixing of company made 1 meter Patch Cord - (Cat- 6)	45	Each	227.00	10,215.00
5	Supplying and fixing of 12U data rack complete including exhaust fan , necessary number of trays for router , modem , switch , power strip etc with incoming & outgoing connections & all accessories suitable for data cabling (CAT-6)	2	Each	9705.00	19,410.00
6	Supplying and fixing of 24 port patch panel including connections (CAT-6)	3	Each	7232.00	21,696.00
TOTAL AMOUNT DATA CABLING WORK				Rs.	1,27,311.00

PART –F FIRE ALARM & DETECTION WORK

S.No	Description	Qty	Unit	Rate	Amount
1	SITC of Optical smoke detectors having red LED blinking type with MS powder quote junction box, TW ghattas, screws, etc and fixed on the / above the false ceiling.				
a	Optical type Smoke Detector	25	No.	1011.00	25275.00
2	Supply, Installation, Testing and Commissioning of Heat detectors operating at 54 degree celsius/ 57 degree celsius with dual thermistor type having red LED blinking type with MS junction box, TW ghattas, screws, etc., and fixed to the ceiling.	2	No.	939.00	1878.00
3	SITC of remote response indicator to the respective optical smoke detectors, the same shall be fixed to the false ceiling / wall partitions with proper fixing accessories.	10	No.	172.00	1720.00
4	SITC of manual call Point (MCP) with break glass and push button in circular / square metal enclosure marked "In case of fire break glass". The same shall be provided with cable entry and painted with 2 coats of red oxide and 2 coats of PO RED enamel paint.	4	No.	416.00	1664.00
5	Supply & fixing of high intensity tone electronic hooters on walls / ceiling with proper fixing accessories, connected to the floor control panel amplified to produce evacuation tone.	2	No.	489.00	978.00
6	Supplying and laying of 3x1.5 sqmm fire alarm armoured cable , 600/1000 V rated with annealed copper conductor having XLPE insulation , steel wire armouring and FRLS outer sheath complete as required.	300	RM	151.00	45300.00
7	Supply, Installation, jointing, Testing and Commissioning of 4 zones Main Fire Alarm Panel with all audio- visual indications complete as required, in suitable enclosure with locking arrangement confirming to IS:2189, digital microprocessor based panel with fault, fire and healthy indication battery charger and inbuilt battery space as required. The panel box should be made of CRC sheet with powder coating with 2 layer primer. The display should be consisting of 80 character backlite alphanumeric LCD display with keypad for operation and monitoring and it should display all types alarm condition, short, open condition. It should be suitable for input of 230V AC, 50 Hz single phase supply complete with 2 NO. 7Ah 24 volt DC SMF battery of Exide make for backup and auto dialer.	1	No.	19050.00	19050.00
TOTAL AMOUNT FIRE ALARM & DETECTION WORK					95865.00

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CHIEF ENGINEER

SITC of AC System –BRANCH OFFICE KHOPOLI UNDER THANE DO

Sr. No.	Item Description	Qty	Unit	Rate	Amount
	<u>1. SITC WORK (Exclusive of GST)</u>	-			
1	Supply Installation Testing and Commissioning of following capacity of DUCTABLE SPLIT UNITS having SCROLL type compressor with R-410A Refrigerant Gas suitable for operations on 3 phase ,415 volt $\pm$ 10 % with ceiling suspended copper evaporation indoor units & outdoor type compressor, copper condenser units, microprocessor based control panel etc. The AC units shall have evaporator & condenser coil of copper material only.(With Corrosion Resistant Coating)				
	Installation: - suspended evaporation units & outdoor type compressor condenser units. The indoor unit shall be suspended with ceiling by means of dash fasteners, 12mm dia. M.S. rods with check nut. Otherwise, making the hook of 12mm dia MS rod for locking with reinforcement of the ceiling & plastered to original finish and canvass connections between evaporating units & plenum/ mouthpiece. The out door unit is to be installed on terrace/outdoor with suitable size of M.S frame, its legs grouted by using cement & sand etc. OR installed on outer wall duly supported with suitable size of MS angle iron frame of balcony Type & channel of adequate capacity, Strong enough to take load of machine and mechanics, including capacity aircooled ductable air conditioner unit with microprocesing panel and corded remote alongwith catch all dryer, with full filling of refrigerant Gas. The rate is inclusive of suitable concrete pedestal (1:2:4) as directed with suitable foundation.				
a	do as above for 8.5 TR Ductable Split AC with Nominal Cooling Capacity of 3516 watt per ton with $\pm$5% tolerance.	1	No.	1,85,000.00	185000.00
b	do as above for 11 TR Ductable Split AC with Nominal Cooling Capacity of 3516 watt per ton with $\pm$5% tolerance. (Double compressor)	2	No.	2,54,000.00	508000.00

Sr. No.	Item Description	Qty	Unit	Rate	Amount
2.0	Supply, Installation, testing & commissioning of following Capacity Hi-Wall Mounting Inverter type Split Air Conditioner with copper condenser coil , with complete accessories required for the unit with R410-A Refrigerant Gas suitable for operation on single phase 230 + 10% volts range, 50Hz A.C. Supply, with Cordless Remote AC machines. "The rate shall be inclusive of copper refrigerant piping, control cabling, drain pipe, Connections, etc along with proper thermal insulation for refrigerant piping and drain pipes to avoid sweating, upto a length of 3 Meters" The AC units shall have evaporator & condenser coil of copper material only.(With Corrosion Resistant Coating)				
a	do as above for 2 TR 5 Star Rated Hi-Wall Split AC with Nominal Cooling Capacity of 3500 watt per ton with ±5% tolerance.	1	No.	52800.00	52800.00
3	Providing & fixing of necessary required size Refrigerant copper pipe (minimum 1 mm thickness) for R-410A Refrigerent Gas with reqired size with nitrile rubber insulation of following size of AC unit complete accessories & duly insulated of following size. Please note suction & discharge line of all compressors will be treated as one.				
a	8.5/11 TR ductable	50	R.M.	1,500.00	75000.00
b	2 TR split AC	10	R.M.	700.00	7000.00
4	Providing and fixing of necessary required size Control Cabling of PVC insulated Cu conductor unarmoured flexible cable in MMS PVC conduit of required size for following size of AC units complete with all accessories including incoming and outgoing connections. Please note the only one length of control cable shall be measured if compressors are more than one.				
a	8.5/11 TR ductable	50	R.M.	255.00	12750.00
b	2TR split AC	10	R.M.	175.00	1750.00
5	Providing & fixing of PVC rigid drain pipe (2mm thickness) with all accessories etc. complete on wall / beam / ceiling in concealed manner by chasing wall / floor / on surface including providing of U trap & heatlon insulation to avoid sweating / condensation specially above false ceiling.				
a	32 mm dia	25	R.M.	185.00	4625.00

Sr. No.	Item Description	Qty	Unit	Rate	Amount
b	25 mm dia	15	R.M.	150.00	2250.00
6	Supplying, fabricating & Installation of Galvanised Steel Sheet (SAIL / TATA / JINDAL / ESPAT) ducting including providing M.S. angle support, flanges, hangers etc. & making good all damages etc.complete of following Gauge / size.				
a	22 Gauge (0.8 mm minimum)	40	Sq.M.	1,150.00	46000.00
b	24 Gauge(0.63 mm minimum)	130	Sq.M.	980.00	127400.00
7	Providing & fixing Accoustic insulation with 13 mm thick Glass Wool insulation (40Kg/CuM Density) to be fixed by using shakolite primer, Hot bituman, wire neting or covered with RP tissue paper or to be held with wooden strips .	40	Sq. M.	400.00	16000.00
8	Providing & fixing of Duct Insulation with 13 mm thick Nitrile rubber (Class O) with aliminium foil of mat finish from out side. The insulation shall be painted black where ever necessary.	130	Sq. M.	535.00	69550.00
9	Providing & fixing Aluminium extruded powder coated supply /Return linear air grills <u>without</u> allum. Volume Control Damper.	9	Sq. M.	6,500.00	58500.00
10	Providing & fixing Aluminium volume Control Damper for supply air grills.	4	Sq. M.	6,800.00	27200.00
11	Providing & fixing Aluminium powder coated diffuser <u>with</u> allum. Volume Control damper.	1	Sq. M.	7,400.00	7400.00
12	Providing & fixing Aluminium powder coated diffuser <u>without</u> allum. Volume Control damper.	1	Sq. M.	6,800.00	6800.00
13	Providing & fixing GI Volume Control Damper for Duct.	1	Sq. M.	6,400.00	6400.00
14	Providing, Fabricating & Fixing suitable MS structure/Platform with painting for AC outdoor unit for outdoor machines. MS Plateform should be made out of suitable type MS grill which can be carry out the Outdoor Unit and Service Person Load and space should be appropriate for standing of service person. (For Cage & Platform)	25	K.g.	130.00	3250.00
15	Providing and fixing of suitable L type AC outdoor unit frame with vibration pad for mounting outdoor machines. The frame shall be carry out the load/weight of outdoor unit	1	Each	1,000.00	1000.00
TOTAL AMOUNT					1218675.00

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GENERAL SUMMARY

NAME OF WORK : E-Tender For Civil & Interior Works Including Modular Furniture, Chairs, Electrical Installation, Data & Telephone Cabling, Fire Alarm Systems, and Air Conditioning For Proposed Modernization Of Branch Office 92 K at First Floor and Second floor of BO Building at Khopoli, Under Thane DO, Maharashtra						
TENDER NO: WZ/ENGG/BO-Kpli/349				Date : 20.10.2022		
NAME OF THE BIDDER						
GENERAL SUMMARY						
S. No.	PART	Description			Amount in Rs.	
1	PART - 'A'	CIVIL & INTERIOR WORKS			3450467.00	
2	PART - 'B'	MODULAR FURNITURE			1744794.00	
3	PART - 'C'	SUPPLY OF CHAIRS			645134.00	
4	PART - 'D'	ELECTRICAL INSTALLTION WORK			1156257.00	
5	PART - 'E'	STRUCTURED DATA CABLING			127311.00	
6	PART - 'F'	FIRE ALARM SYSTEM			95865.00	
7	PART - 'G'	AIR CONDITIONING WORKS			1218675.00	
8		TOTAL			8419528.00	
Sr. No.	Description Of Work	Estimated Cost (In Rs.)	Quoted Percentage above or below, at par on the estimated cost.	Contractor has to Quote (inpercent ages (%)in Figures)	Final Amount arrived after adjusting % quoted (TotalCost) {Net Quoted Tender Amount}	
1	E-Tender For Civil & Interior Works Including Modular Furniture, Chairs, Electrical Installation, Data & Telephone Cabling, Fire Alarm Systems, and Air Conditioning For Proposed Modernization Of Branch Office 92 K at First Floor and Second floor of BO Building at Khopoli, Under Thane DO, Maharashtra					
	TOTAL QUOTED AMOUNT (In Figures) :-			Rs.		
	TOTAL QUOTED AMOUNT (In Words) :-					

2	Prime cost item for providing of hardware fittings and fixtures as per direction and as approved. Original purchase voucher/cash memo has to be submitted for reimbursement. (Item No:M14 PART- A ; Civil & Interior works)	Lump Sum	20000.00
3	Fitting & fixing of the hardware fittings including all fixing materials such as screws, nails adhesive etc. all labour charges and profits and overhead expenses. (T.No. – M15 of PART - "A" - CIVIL & INTERIOR WORKS)	25% on prime cost items.	5000.00
		Total	8444528.00

TIME & PROGRESS CHART							
NAME OF WORK : E-Tender For Civil & Interior Works Including Modular Furniture, Chairs, Electrical Installation, Data & Telephone Cabling, Fire Alarm Systems For Proposed Modernization Of Branch Office 92 K at First Floor and Second floor of B0 Building at Khopoli, Under Thane DO, Maharashtra							
Sl. No.	Description	Days					
		15	30	45	60	75	90
1	CIVIL & INTERIOR WORK INCLUDING MODULAR FURNITURE WORK AND RENOVATION WORK						
2	ELECTRICAL INSTALLATION WORK						
3	DATA & TELEPHONE CABLING WORK						
4	FIRE ALARM SYSTEMS WORK & PA SYSTEM						
5	AIR CONDITIONING WORK						
6	SUPPLY OF CHAIRS						
Refer Clause Nos. 4.1 to 4.3 of General Instructions to Contractors/Builders							

Note:

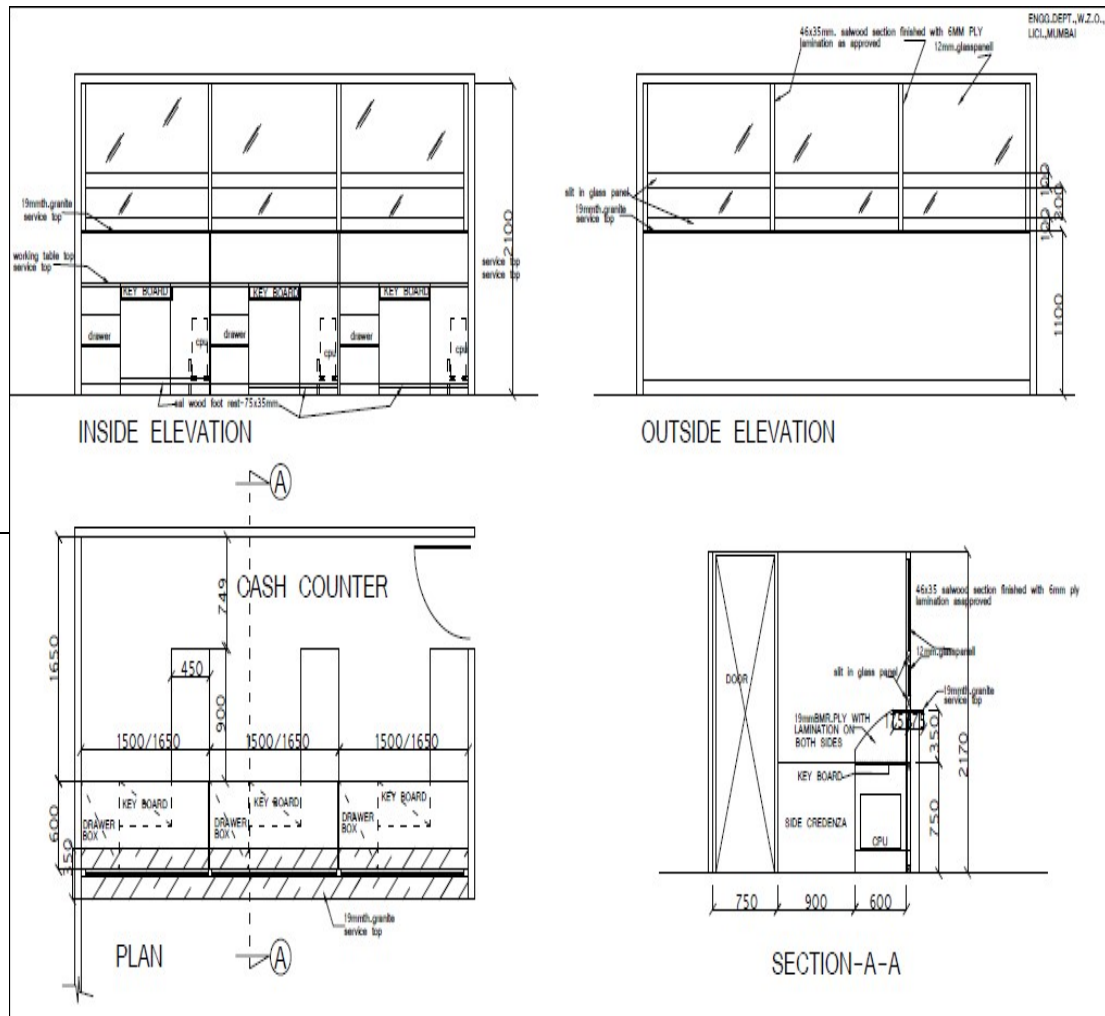
1. Default in compliance with this programme in the chart in any of its section shall entail operation of **compensation for delay in the form of penalty** (Clause no 19) under **“Condition of contract”** in whole or part of the sole discretion of the Chief Engineer.
2. With reference to Clause no.4 under “General instruction to Contract” unless the contractor submits **time and progress Chart (CPM/PERT/Quantified Bar Chart)** within **10 days of communication of letter of Intent**, this chart shall be deemed to be as agreed and submitted by him.

TENDER DRAWINGS

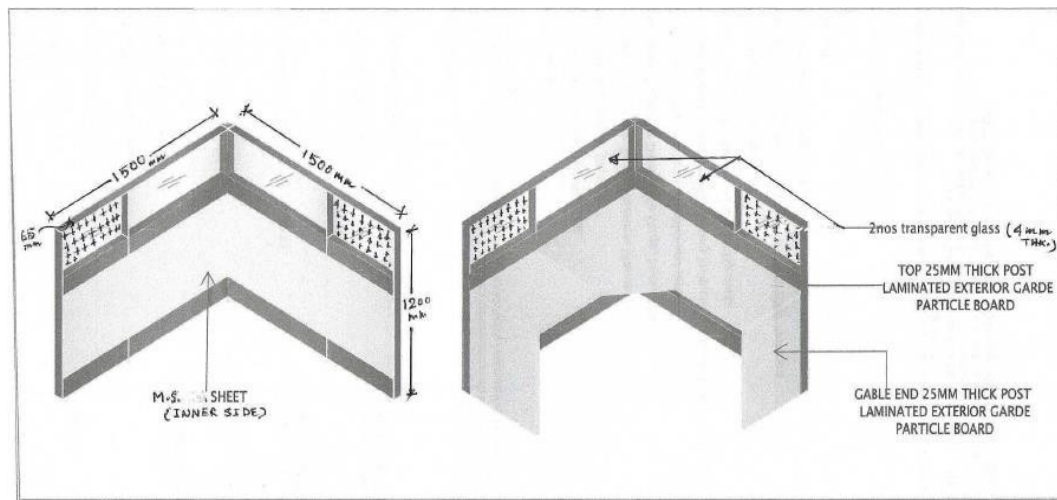
NAME OF WORK : E-Tender For Civil & Interior Works Including Modular Furniture, Chairs, Electrical Installation, Data & Telephone Cabling, Fire Alarm Systems, and Air Conditioning For Proposed Modernization Of Branch Office 92 K at First Floor and Second floor of BO Building at Khopoli, Under Thane DO, Maharashtra

Sl. No.	Description
1	LAYOUT OF MODERNISATION WORK
2	TYPICAL LAYOUT FOR CASH COUNTER
3	MODULAR PARTITION & WORKSTATION DRAWING
4	MANAGER'S TABLE
5	OFFICER'S TABLE
6	FULL HEIGHT STORAGE UNIT

(1) TYPICAL LAYOUT FOR CASH COUNTER



(2) MODULAR PARTITION & WORKSTATION DRAWING

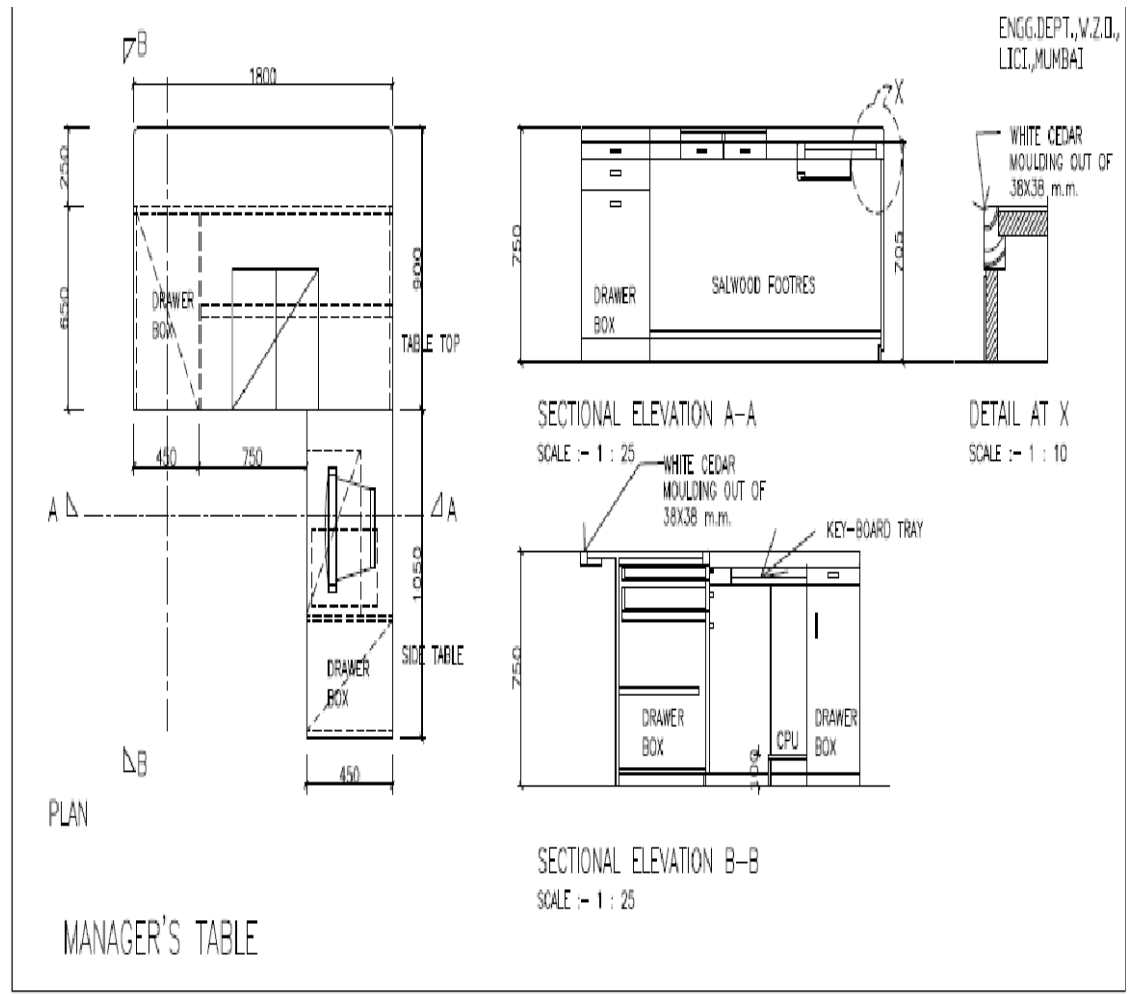


SPECIFICATION		
S.No.	ITEM	SPECIFICATION
1.	Modular partition	Tile based partition system with double skin partition & two raceway system shall be 60mm thick.
2.	Lshape workstation 1500x1500x550	L shape work top shall be made of 25mm thick particle board top finished having post forming/edge banded profile on front side and rest of the side 2mm thick pvc tape
3.	(KEY BOARD TRAY)	Keyboard tray shall be made in CRC sheet duly powder coated and sliding channel.
3.	(C.P.U TROLLEY)	C.P.U tray shall be made in CRC sheet duly powder coated and telescopic sliding channel.

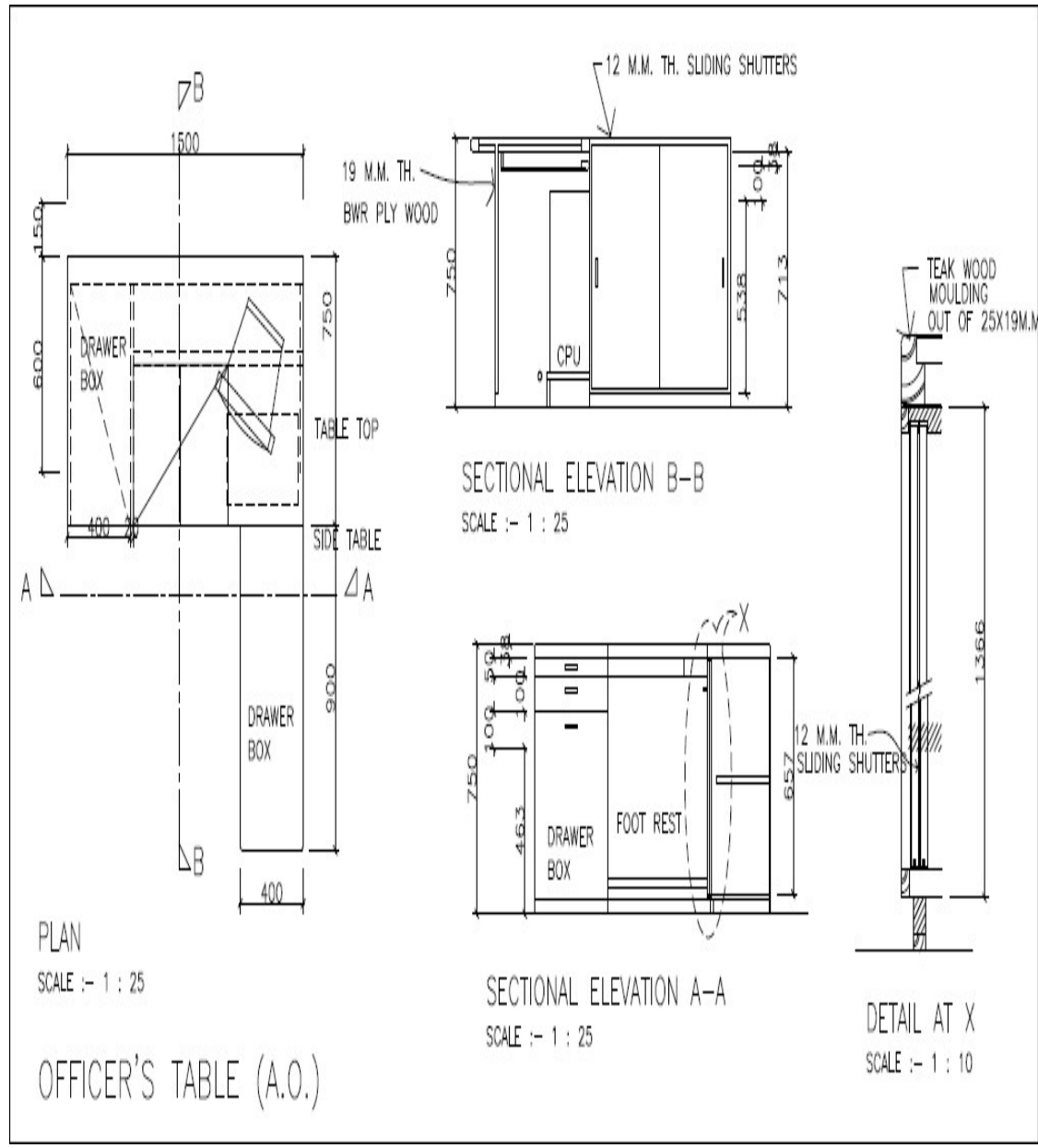
WORKSTATION DRAWING

ISOMETRIC VIEW

(3) MANAGER'S TABLE



(4) OFFICER'S TABLE



(5) FULL HEIGHT STORAGE UNIT

