REQUEST FOR TENDER

FOR

Selection of Contractor for the Proposed Interior & Furnishing, Civil, MEPF works of ECGC LIMITED at 2nd Floor of Brilliant Centre, 17, Race Course Road, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001

ECGC LTD.

(A Government of India Enterprise)

Ref: ECGC/Indore/Admn/P/2026/1

INDORE BRANCH
408,
4th Floor, City Centre,
570 MG Road, Indore (M.P.)
Phone:0731-2544 215 / 355, Mob:94243 60305

PROJECT ARCHITECT
KALAAKAAR & ASSOCIATES
Contact Nos: 07314003736, 9111936314
Mail: kalaakaar.architect@gmail.com

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SECTION-1

1. INTRODUCTION

1.1. INVITATION TO BIDDERS

ECGC Limited (hereinafter 'the Company'/'ECGC'), a wholly owned Government of India Company established in the year 1957, invites competitive bids by way of this 'Request For Tender' (hereinafter 'RFT'/'Tender'/'Tender Documents'/'Bid Documents') from reliable, resourceful, and experienced Firms/Companies/Individual Contractors (hereinafter 'Bidder(s)'for the Interior & Furnishing, Civil, and MEP works at ECGC Limited, located at the 2nd Floor, Brilliant Centre, 17, Race Course Road, Janjeerwala Square, Opposite Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001 (New Branch premises in Indore). Eligible Bidders must have prior experience of similar nature of work, preferably carried out in any Public Sector Enterprises or Banks and should have adequate technical and financial capacity to execute such interior and civil projects.

The "Technical Bids" and "Financial Bid" along with the supporting documents would be received in physical form in sealed envelopes. The Financial Bid will be opened by an authorized representative of the Company after Technical evaluation.

The Bidder(s) are advised to study the Tender Document carefully. Submission of Bids shall be deemed to have been done after careful study and examination of the Tender Document with full understanding of its implications.

The Bid Document can be downloaded from the Company's website www.ecgc.in

Please note that all the required information as sought in the Tender document needs to be provided by the bidders. Incomplete or conditional information may lead to rejection of the Bid. The Company reserves the right to change the dates mentioned in this Tender Document, which will be communicated to the Bidder(s), and shall be displayed on the Company's website. The information provided by the Bidder(s) in response to this TENDER Document will become the property of ECGC and will not be returned. ECGC reserves the right to amend, rescind or reissue this Tender Document and all SUBSEQUENT amendments, if any. Amendments or changes shall be displayed at ECGC's website only.

1.2. SCHEDULE OF EVENTS

DATE OF NOTIFICATION	: 20/01/ 2026
BID DOCUMENT AVAILABILITY	: This Bid document can be downloaded from website w.e.f 20/01/2026.
PLACE / DATE OF PRE-BID MEETING & SITE VISIT COORDINATION	: 28/01/2026 at 11:00 AM 408, City Centre 4th Floor,570 MG Road, Indore (M.P.)
LAST DATE FOR SUBMISSION OF THE COMPLETED TENDER DOCUMENT	: 09/02/2026 up to 05.00 PM
DATE OF OPENING OF TECHNICAL BID	: 11/02/2026 at 11.30 AM
DATE OF OPENING OF FINANCIAL \ COMMERCIAL BID	: Within 15 days of opening of Technical Bids. Date will be Communicated to Bidder(s) who will qualify in the Technical Bid.
Estimated Cost of Project	**1,40,00,000/- (Rupees One Hundred and Forty lacs only)**
Validity of Bid	90 days from the last date for submission of Bid
Earnest Money Deposit (EMD) FEE	Rs.2,80,000/- in the form of Demand Draft (DD) in favour of ECGC LTD. payable at Indore (2% of the total estimated cost of the project)
Project Site Address	2nd Floor of Brilliant Centre, 17, Race Course Road, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001
Address for communication and submission of Bid	ECGC L.T.D. at 408, City Centre 4th Floor, 570 MG Road, Indore - 452 001(M.P.)
All correspondences/queries related to this Request For Tender should be sent to/through following email ID only	indore@ecgc.in Mr. Vikas Kumar Patkar, Branch Manager. Phone no : 0731-2544-215/355, +91 9424360305, 9826259893

Note:

i. In the event of any of the above-mentioned dates being declared as a holiday the tender will be opened on the next working day at the appointed time.

ii. **Timelines are subject to change at the sole discretion of ECGC Ltd.**

iii. Any subsequent corrigendum/addendum to this RFT shall be published on the Company's website at www.ecgc.in only. Prospective Bidders are requested to visit the website regularly.

SECTION-2

2. DISCLAIMER

The information contained in this Tender Document or information provided subsequently to Bidder(s) in documentary form by or on behalf of ECGC, is provided to the Bidder(s) on the terms and conditions set out in this Tender document and all other terms and conditions subject to which such information is provided.

This TENDER Document is neither an agreement nor an offer and is only an invitation by the Company to the interested parties for submission of Bids. The purpose of this TENDER Document is to provide the Bidder(s) with information to assist the formulation of their bids.

This TENDER Document does not claim to contain all the information each Bidder may require. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this Tender Document and where necessary obtain independent advice at their own cost, if any. ECGC shall incur no liability under any law, statute, rules or regulations as to accuracy, reliability or completeness of this document.

The Company may, in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this Tender Document. No contractual obligation whatsoever shall arise from the Tender process until a formal letter from the duly authorized representative of the Company communicating the award of Tender is received by the selected Bidder.

ECGC reserves the right to reject any or all the bids received in response to this document at any stage without assigning any reason whatsoever. The decision of ECGC in this regard shall be final, conclusive and binding on all the parties.

SECTION-3

3. INSTRUCTIONS FOR BIDDER(s)

3.1. GENERAL INSTRUCTIONS

3.1.1. Before bidding, the Bidder(s) are requested to visit the ECGC website https://www.ecgc.in and also carefully examine the Tender Document and the General Terms and Conditions of the Contract (TCC) contained therein, and if there appears to be any ambiguity or discrepancy between any terms of the Tender Document and the Contract, they should immediately refer the matter to ECGC for clarifications.

3.1.2. The Bidder, for the purpose of making the Bid, shall complete in all respects, the form(s) annexed to the Tender Document, quote the Rates, with Amount (prices) and furnish the information/ documents, called for therein, and shall sign and put date on each of the forms/documents in the space provided therein for the purpose. The Bidder shall affix its initial on each page of the Bidding Documents.

3.1.3. The Bid shall be signed by a person(s) duly authorized by the Bidder with signature duly attested. In case of a body corporate, the Bid shall be signed by the officer(s) duly authorized by the body corporate with its common seal duly affixed.

3.1.4. The Bid shall contain the address, Tel. No., Mobile No. , WhatsApp number and e-mail id, if any, of the Bidder, for the purposes of serving notices required to be given to the Bidder in connection with the Bid.

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

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

3.1.7. The Bidder, irrespective of its participation in the bidding process or its outcome, shall treat the details of the documents as privileged, and confidential.

3.1.8. ECGC does not bind itself to accept the lowest of any Bid or any other bid received and shall have the right to reject any Bid without assigning any reason whatsoever. ECGC also reserves the right to re-issue the Tender

3.1.9. The Bidder should commit to provide the resources desired by ECGC for the entire duration of the engagement, at the agreed cost and terms and conditions.

3.1.10. All rates and total amount should be written both in **figures and in words** and if there is any discrepancy between the two, the lowest amount will only be considered and accepted.

3.1.11. No questions or items in the annexures shall be left blank or unanswered. Where the bidders have no details or answers to be provided a 'No' or 'Nil' or 'Not Applicable' statement shall be made as appropriate. Forms with blank columns or unsigned forms will be summarily rejected.

3.1.12. Bids not conforming to the requirements of the Tender may not be considered by ECGC. However, ECGC reserves the right at any time to waive any of the requirements of the Tender.

3.1.13. Bids must be received by ECGC at the address specified, no later than the date & time specified in the "**Schedule of Events**" in the Request for Tender.

3.1.14. ECGC is not responsible for non-receipt of bids within the specified date due to any reason, including postal delays or holidays.

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

3.1.16. ECGC reserves the right to accept or reject any Bid or to cancel the entire tendering process and reject all Bids at any time prior to contract award, without incurring any liability to the affected Bidder or Bidder(s). All decisions taken by ECGC shall be binding and final.

3.1.17. ECGC reserves the right to verify the validity of bid information and reject any bid, where the contents are found incorrect (whether partially or fully), manufactured, or fabricated at any time during the process of Tender or even after the issuance of the work order.

3.1.18. The bid is liable to be preliminarily disqualified in the following cases:

i. Bid received from ineligible bidders.

ii. Bid not submitted in accordance with the instructions laid down in the Tender.

iii. Bid received in incomplete format.

iv. Bid is not accompanied by all requisite documents.

v. Bid is received after the due date.

3.1.19. The rates should be submitted only in the prescribed format. Non-conformance or quotations or BOQ received, in any other format, containing any notes, conditions, may result in rejection of the Bid.

3.1.20. No change in requirements specifications/line items will be entertained in terms of the Bid process, except if such changes are advised or are approved by the Company.

3.1.21. The Bidder, at his own responsibility, costs and risk should visit the site to ascertain the working conditions and local authority rules/ regulations / restrictions if any and other information required for the proper execution of the work and obtain all information that may be necessary for preparing

the Bid as mentioned in the Request for Tender, before submitting the bid with full satisfaction. The successful Bidder shall not be entitled to any claim of compensation for difficulties faced or losses incurred on account of any site conditions which existed before the commencement of the work or which in the opinion of the Company might be deemed to have reasonably been inferred to be so existing before commencement of work. Necessary permission, wherever required, to be taken from the nodal contact person of ECGC namely Mr. Vikas Kumar Patkar, Branch Manager. Phone no: 0731-2544-215/355, +91 9424360305, 9826259893. Site visit certificate by the bidder duly signed by ECGC Indore, shall be submitted, in the specified Annexure I along with the tender / bid document.

3.1.22. Tender containing any condition leading to unknown / indefinite liability, are liable to be summarily rejected.

3.1.23. Canvassing in connection with Tenders is strictly prohibited and the bids submitted by the Bidders who resort to canvassing shall be liable to be rejected.
The Bidder should quote their (own) rates for undertaking the work. The work is to be carried out at **ECGC Limited 2nd Floor of Brilliant Centre, 17, Race Course Rd, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001**

3.1.24. Please note that materials and machines may be required to be carried on headload and the same must be accounted for in the costing. Please note that no separate cost shall be allowed for headload.

3.1.25. The quantities of various items given in the Bill of Quantities are approximate. The quantities of work may vary at the time of allotment / execution of work. The company reserves the right to omit / delete any item(s) of work from the schedule before the order for purchase of the same has been placed by the Vendor. The Bill of Quantities shall be filled in as follows:

i) The rates column to be legibly filled in ink in English figures.

ii) The amount column to be filled in figures for each item and the amount for each subhead as in the "Bill of Quantities".

iii) All corrections are to be initialed.

iv) The "Rate Column" (for alternative items shall be filled up).

v) The "Amount" for alternate items of which the quantities are not mentioned shall not befilled up.

vi) In case of any errors/omissions in the quoted rates, the rates given in the tender marked"original" shall be taken as correct rates.

vii) The Bidders should note that the tender is strictly on the item rate basis and their attention is drawn to the fact that the rates for each

and every item should be correct, workable and self-supporting. The Bidder should ensure that unrealistic (lower than workable rates, or excessively high rates), ambiguous or unquantifiable costs / amounts are not included in the Bid, which would disqualify the Bid. If called upon by the Company, detailed analysis of any or all the rates shall be submitted by the contractor. The Company shall not be bound to recognize the contractor's analysis.

viii) The work will be paid for as "measured work" on the basis of actual work done and not as "lump sum" contract.

ix) All items of work described in the Bill of Quantities are to be deemed and paid as complete works in all respects and details including preparatory and finishing works involved directly related to and reasonably detectable from the drawings, specifications and Bill of Quantities and no further extra charges will be allowed in this connection. In the case of lump sum charges in the tender in respect of any item of works, the payment of such items of work will be made for the actual work done on the basis of lump sum charges as will be assessed to be payable by the employer.

x) The Company has power to add to, omit from any works as shown in drawings or described in specifications or included in Bill of Quantities and intimate the same in writing but no addition, omission or variation shall be made by the Vendor without authorization from the Company. No variation shall vitiate the contract.

3.1.26. The unit rate shall be deemed to be fixed price. In case of extra items, a record shall be maintained and shall be presented regularly to the Company for checking. In case of extra items where similar or comparable items are quoted in the Tender, extra rates shall be based on Tender rates. Rates of Extra items shall be determined in the following order of preference whereby only when the first rate is completely ruled out, can the second rate be opted for and so on until the fourth rate which shall be the final rate if none of the preceding rates are found suitable. First: - Similar comparable item rate quoted in the BOQ, Second: - Similar nearest comparable item rate quoted in the BOQ, Third: - Nearest comparable CPWD Schedule or rates/or practices.

3.1.27. The Bidder shall submit the insurance cover for the work in the form of Contractor's all risk Insurance Policy (CAR) policy within fifteen (15) days from the acceptance of award of tender letter, from an insurance company approved by IRDAI.

3.1.28. Contractor shall not use modified/redirected old material of other projects. Only new material with bills mentioning consignee/customer as ECGC Limited shall be used.

3.1.29. The Bids shall summarily be rejected if any one of the above said requirements has not been fulfilled and complied with.

3.1.30. **Cost of Bidding:** The Bidder shall bear all the Costs associated with the preparation and submission of its Bid, and the Company will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the Bidding process **ECGC** reserves the right to reject or accept any or all the offer(s) without assigning any reason whatsoever and is not liable for any Cost that might have been incurred by any Bidder at the stage of Bidding.

3.2. Eligibility Criteria:

3.2.1. The participants should furnish the following documents to be considered as technically qualified along with the tender document:

i. Bidder shall produce credential in the form of completion certificate of at least 1 (one) similar nature of work of the minimum value of **Rs. 112 Lakh** put to tender during last 3 (Three) years prior to the date of issue of this tender notice from any Central/State/PSU/Any Public Sector Bank/Insurance Companies or Department. Form 26 AS in Supporting of Completion certificate as documentary proof shall be submitted by bidder.

Or

ii. Bidder shall produce credentials in the form of completion certificate of 2 (two) similar nature of work of the minimum value of **70 Lakh** amount put to tender during last 3 (Three) years prior to the date of issue of this tender notice; (Only completed work shall be the criterion) from any Central/State/PSU/Any Public Sector Bank/Insurance Companies or Department. Form 26 AS in Supporting of Completion certificate as documentary proof shall be submitted by bidder.

Or

iii. Bidder shall produce credentials in the form of completion certificate of 3 (three) similar nature of work of the minimum value of **42 Lakh** amount put to tender during last 3 (Three) years prior to the date of issue of this tender notice; (Only completed work shall be the criterion) from any Central/State/PSU/Any Public Sector Bank/Insurance Companies or Department. Form 26 AS in Supporting of Completion certificate as documentary proof shall be submitted by bidder.

Note:

i) Copy of completion certificate duly signed of satisfactory work from the respective previous employers / competent authority of the bidder(s) of part works shall be submitted with their bid. In the required certificate, it should clearly be stated that the work has been completed to their satisfaction and also that no penal action has been initiated against the bidder.

ii) Payment certificate will not be treated as completion certificate. Copy of completion certificate without actual date of completion will not be entertained.

3.2.2. Audited Balance-sheet for previous five financial years must be submitted as per **Annexure D**. Average annual financial turn-over during last five (5) previous financial turn-over with latest financial year ending on 31st March 2025 should be at least Rs.150 lakhs value and as per pre-qualification Performa detailed in **Annexure E**.

3.2.3. Valid Professional Tax Receipt Challan for the relevant period, Valid PAN issued by the IT Dept. Govt. of India, Valid Goods and Services Taxpayer Identification Numbers (GSTIN) under GST Act 2017 as per notification No: - 4374 -F(Y) dated 13.07.2017 & Income Tax Acknowledgement Receipt for assessment year 2023-24 and 2024-25 (if available) to be submitted.

3.2.4. A declaration (Affidavit) in this respect must be furnished by the prospective bidders as per prescribed format vide **Annexure- H** without which the Technical/Pre-qualification Bid shall be treated as non-responsive. Time period is essence of the project and no excuse for delay/ late completion of work will be entertained. Successful bidder will have to complete the work within the prescribed time schedule otherwise penalties will be imposed.

3.2.5. Should have operational office in state of Madhya Pradesh preferably in Indore, supporting documents of registered office shall be submitted in technical bid.

3.2.6. Site Inspection Certificate duly signed by Competent Authority of ECGC Indore as per Annexure - I.

3.3. PRE-BID QUERIES

3.3.1. Bidder(s) having any doubt/ queries/ concerns with any clause of this document or selection process shall raise their concern within 7 days of release of TENDER Document. ECGC will not be liable to accept or provide any explanation towards any doubt/ concerns later on whatever the same may be.

3.3.2. **The queries may be communicated only through the e-mail id provided, which is indore@ecgc.in , queries in any other forms or at a later date shall not be accepted.** The queries may be resolved by ECGC officials through emails or during the pre-bid meeting / site inspection. The pre-bid

meeting shall be attended by a person duly authorized by the Prospective Bidder with signature duly attested.

3.3.3. If any discrepancy arises between two similar clauses on different notification(s), the clause as stated in later notification will supersede the former one.

3.4 PREPARATION AND SUBMISSION OF BIDS

3.4.1. Language of Bid:

a) The Bid prepared by the Bidder, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Company and supporting documents and printed literature shall be submitted in English.

b) The bidder will be issued one set of drawings: The Tender documents can be downloaded from the website.

c) The Bid is to be submitted in 2 parts i.e. Part 1 Technical Bid and Part 2 Financial Bid as under:

i) **Envelope No.1 (Technical Bid, Earnest Money & Supporting Documents)**

Envelope No.1 shall contain 1) Technical bid along with all supporting documents and 2) Earnest money deposit in the form of Crossed **Demand Draft of Rs 280000 (Rupees Two Lacs Eighty Thousand Only)** in favor of ECGC Ltd. payable at INDORE for "Request for Tender for Selection of Contractor for the Proposed Interior & Furnishing, Civil, MEPF works of ECGC LIMITED at 2nd Floor of Brilliant Centre, 17, Race Course Road, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001. All the following Annexures 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H' and 'I' (and supporting documents) are to be submitted as part of the Technical Bid:

This envelope shall be superscribed "Envelope No.1 (Technical Bid & Earnest Money)

ii) **Envelope No.2 (Price/Financial Bid)**

Envelope No.2 shall contain the Financial Bid document duly filled in with complete details and description including all data, which are to be supplied by Bidders as specified in this Bid. This envelope shall be superscribed **"Envelope No.2 (Tender Document & Financial Bid)** for Request for Tender for Selection of Contractor for the Proposed Interior & Furnishing,

Civil, MEPF works of ECGC LIMITED at 2nd Floor of Brilliant Centre, 17, Race Course Road, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001" . The following Annexures 'J', 'K' and 'L' (and supporting documents, if any) are to be submitted as part of the Financial Bid.

iii) Both these envelopes are to be sealed and submitted in a single large outer non-window envelope superscribed **"**Request for Tender for Selection of Contractor for the Proposed Interior & Furnishing, Civil, MEPF works of ECGC LIMITED at 2nd Floor of Brilliant Centre, 17, Race Course Road, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001". This outer envelope shall be addressed to the Company at the given address: **BRANCH MANAGER, ECGC L.T.D. at 408, 4th Floor, City Centre, 570 MG Road, Indore (M.P.)**

3.4.2. All envelopes should indicate the name and address of the bidder on the cover.

3.4.3. If the envelopes are not sealed and marked, the company will assume no responsibility for the Bid's misplacement or premature opening.

3.4.4. Bidder shall apply with self- attested photocopies of all credentials and other relevant documents such as valid certificates, valid Partnership deed (in case of Partnership firm), current Professional Tax deposit Challan/ Professional Tax clearance certificate, PAN card, Trade License from the respective Company, Municipality, Panchayat etc. for participating in this Tendering process to the ECGC Limited.

3.4.5. The papers like Forms, supporting documents as mentioned above etc. should be submitted in one lot in one envelope. The bid shall be in A4 size papers duly numbered with index. Bids should be spirally bound or fastened securely before submission. Bids submitted in loose sheets shall be disqualified.

3.4.6. The Technical/Pre-qualification Bid should not contain any price information. Such bid, if received, will be rejected

3.4.7. Bid Prices are to be quoted in Indian Rupees only and the quotation shall be in figures as well as words at a percentage above or below than or at par with the relevant prices schedule of rates.

3.4.8. Prices quoted by the Bidder shall remain fixed during the Bidder's performance of the Contract and shall not be subject to variation on any account, excluding exchange rate fluctuations, during the validity period of the contract. GST, Cess etc. levied by Central or State Governments may

be charged as per actuals and are allowed to be varied. A Bid submitted with an adjustable price quotation will be treated as non-responsive and shall be rejected.

3.4.9. The documentary evidence of the Bidder's qualifications to perform the Contract in its Bid will be accepted only if it is established that the same are to the Company's satisfaction.

3.4.10. **Partial bids:** Partial Bids will not be accepted and shall be rejected. Bidder(s) shall have to quote for the entire scope.

3.4.11. The Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. The person or persons signing the Bids shall authenticate all pages of the Bids, except for un-amended printed literature.

3.4.12. Any inter-lineation, erasures or overwriting shall be valid only if they are authenticated by the person signing the Bids. The Company reserves the right to reject bids not conforming to the above.

3.4.13. All documents submitted in the context of this TENDER Document, whether typed, written in indelible ink, or un-amended printed literature, should be legible / readable. Non-compliance to this clause shall result in Bid being considered as non-responsive and shall be rejected at the outset.

3.4.14. The tender should be submitted in the prescribed form and the same should be signed by an authorized signatory.

3.4.15. **ADDITIONAL INFORMATION**: Bidder may include additional information that will be essential for a better understanding of the proposal. This may include diagrams, excerpts from manuals, or other explanatory documentation, which would clarify and/or substantiate the bid. Any material included here should be specifically referenced elsewhere in the bid.

3.4.16. **GLOSSARY**: Provide a glossary of all abbreviations, acronyms, and technical terms used to describe the services or products proposed. This glossary should be provided even if these terms are described or defined at their first use or elsewhere in the bid response.

3.5 DEADLINE FOR SUBMISSION OF BIDS

i. Bids must be received by the Company at the address specified, no later than the date & time specified in the "Schedule of Events" in Invitation to Bid.
ii. In the event of the specified date for submission of Bids being declared a holiday for the Company, the bids will be received up to the appointed time on the next working day.
iii. The Company may, at its discretion, extend the deadline for submission of

Bids by amending the appropriate terms and conditions in the Bid Document, in which case, all rights and obligations of the Company and Bidders previously subject to the deadline will thereafter be subject to the extended deadline, which would also be advised on the Company's website.

3.6 LATE BIDS:

Any Bid received after the deadline for submission of Bids prescribed, will be rejected.

3.7 PERIOD OF VALIDITY OF BIDS

3.7.1. Bids and the rates quoted shall remain valid for a period of 90 days from the last date of submission of 'Bid in Sealed Envelope'. If the Bidder withdraws the Bid, any time after acceptance of the bid during the period of Bid validity his Earnest Money Deposit shall be forfeited.

3.7.2. In exceptional circumstances, the Company may solicit the Bidder's consent to an extension of the period of validity of the Bid on the same terms and conditions. The request and the responses thereto shall be made in writing. At this point, a Bidder may refuse the request without risk of exclusion from any future Tenders or any debarment

3.7.3. The Company reserves the right to call for fresh quotes at any time during the validity period of the Bid, if considered necessary.

3.8 MODIFICATION AND WITHDRAWAL OF BIDS

3.8.1. The Bidder may modify or withdraw its Bid after the Bid's submission, provided that written notice of the modification, including substitution or withdrawal of the Bids, is received by the Company, prior to the deadline prescribed for submission of Bids, the Bidder may do so without any penal action including debarment or exclusion from any future Tenders / contracts / business, provided the Bidder submits its decision to the Company in writing, along with its reasons for the same.

3.8.2. No Bid shall be modified after the deadline for submission of Bids.

3.8.3. No Bid shall be withdrawn in the interval between the deadline for submission of Bids and the expiration of the period 120 days from last date of submission of Bid. Withdrawal of a Bid during this interval may result in penal action including debarment or exclusion from any future TENDERs /

contracts / business. Sealed Financial bids shall be opened by the designated Tender opening Committee at the specified time and place.

3.8.4. Bidders who wish to be present at the time of opening of Tender may be present at the Office address as mentioned above on the date and time fixed for opening of the Tender.

3.8.5. Bids once received shall not be returned after deadline for submission of Bids.

3.9 OPENING AND EVALUATION OF BIDS

3.9.1. ECGC reserves the right to open the Bids soon after the cutoff time and date specified in the RFT.

3.9.2. Prior to the detailed evaluation, the Company will determine the responsiveness of each Bid to the Bid Document. For purposes of these clauses, a responsive Bid is one, which conforms to all the terms and conditions of the Bid Document without any deviations.

3.9.3. The Company's determination of a Bid's responsiveness will be based on the contents of the Bid itself, without recourse to extrinsic evidence.

3.9.4. Only those Bidders and Bids which have been found to be in conformity of the terms and conditions of RFT during the preliminary evaluation would be taken up by ECGC for further detailed evaluation.

3.9.5. The Technical Evaluation would be first carried out as per the Eligibility Criterion specified above as per their technical bid (in form of Annexure- A) During evaluation and comparison of Bids, the Company may, at its discretion ask the Bidders for clarification of their bid. The request for clarification shall be in writing and no change in prices or substance of the Bid shall be sought, offered or permitted. No post Bid clarification at the initiative of the bidder shall be entertained.

3.9.6. All those Bidders which are found eligible in the Technical evaluation will be shortlisted and their Financial/Price Bids shall be opened for evaluation.

3.9.7. Bidder(s) bidding in the process shall give as a part of the Bidding documents a statement on their letter head, as per the format provided under Annexure - B, that they have no objection to any clause of the Tender Documents.

3.9.8. Company may waive off any minor infirmity or non-conformity or irregularity in a Bid, which does not constitute a material deviation, provided such a waiving does not prejudice or affect the relative ranking of any Bidder.

3.10 AWARD CRITERIA

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

3.10.2. In case, the bidder, whose bid has been found to be the lowest evaluated bid withdraws or whose bid has been accepted, fails to sign the procurement contract as may be required or fails to provide the security as may be required for the performance of the contract or otherwise withdraws from the procurement process, the Procuring Entity (ECGC) shall re-tender the case

3.10.3. The successful Bidder will have to execute a Work agreement within 10 working days of the acceptance of award of Contract, which will be valid for the tenure as mentioned in this TENDER Document

3.10.4. In case there are two lowest bids, the preference shall be given to the bidder with higher overall turnover as per the latest audited balance sheet.

3.11 CONTACTING THE COMPANY

3.11.1. The Bidder may submit in writing any tender enquiry on matters where clarifications or additional information is desired as per the dates mentioned in the schedule.

3.11.2. If considered appropriate, the ECGC Ltd reserves the right to issue addendum(s) or amendment(s) to any condition/specifications/schedules to all Bidders before the date of submission. Tenders submitted by the Bidders shall be deemed to cover the effect of such addendum(s)/amendment(s) issued and such addendum(s)/amendment(s) duly signed by the Bidders shall be submitted along with the tenders.

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

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

3.12 EARNEST MONEY DEPOSIT (EMD)

3.12.1. Earnest Money Deposit of Rs. 280000/- (Rs. Two lakhs Eighty Thousand only) is required to be deposited through a Demand Draft (DD) issued from any nationalized bank in favour of "ECGC Limited**"** payable at Indore and it must accompany the tender.

3.12.2. It should be submitted under sealed cover along with the Technical Bid documents. Bids submitted without EMD are liable to be rejected.

3.12.3. EMD of the unsuccessful bidders shall be returned to them after expiry of the final bid validity and latest by the 30th day after the issuance of work order. Under any circumstance, ECGC shall not be liable to pay any interest on EMD.

3.12.4. Following categories of Sellers shall be exempted from furnishing EMD:

a) Micro and Small Enterprises whose credentials are validated online through Udyog Aadhaar.

b) Startups as recognized by Department for Promotion of Industry and Internal Trade (DPIIT).

3.12.5. Forfeiture of Earnest Money Deposit: The Earnest Money may be forfeited

a) If the Bidder withdraws the Bid after last date of filing bid.
b) In case of a successful Bidder if the Bidder fails within the specified time limit to accept the award of contract.
c) If the successful bidder does not start work within the time specified in tender document or refuses to accept the award of tender.
d) Withdraws or modify or impairs or derogates from the bid in any respect within the period of validity of its bid; or
e) If it comes to notice that the information / documents furnished in its bid is false, misleading or forged; or
f) Fails to furnish requisite performance security / PBG within stipulated time required as per bid / RA conditions

3.13 PERFORMANCE BANK GUARANTEE (PBG)

3.13.1. The Successful Bidder will have to provide Performance Bank Guarantee (PBG) of 3% of the bid amount within 14 (fourteen) days of acceptance of tender award letter. On submission of such PBG, EMD (in form of DD) shall be returned. The Performance Bank Guarantee will be released after successful completion of the project duly certified by the Architect. The

Company may terminate the contract in the event the successful bidder fails to furnish the Performance Bank Guarantee for an amount equal to 3% of the value of the contract or fails to execute the agreement within specified period.

3.14 SPECIAL INSTRUCTIONS FOR BIDDER

3.14.1. The details of work to be carried out and its scope are given in the Annexure and Bill of Quantities of these documents which also indicate a brief description of the Project which is to be executed.

3.14.2. The Bidders are advised to study the same carefully before bidding and they shall be deemed to have fully acquainted themselves with the same.

3.14.3. The Bidders, in their own interest, are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders, in respect of the site conditions including but not restricting to the following which may influence or effect thework or cost thereof under the contract:

a) Site conditions including access to the site, existing and required roads and other means of transport/communication for use by him in connection with the work.

b) Requirement and availability of land and other facilities for his enabling works, stores and workshops etc.

c) Ground condition including those bearing upon transportation, disposal, handling and storage or materials required for the work or obtained there from.

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

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

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

3.14.4. The Bidders should note that the information, if any, regarding the site and local conditions, as contained in these tender documents has been given merely to assist the Bidders and is not warranted to be complete.

3.14.5. The Bidders should note and bear in mind that ECGC Ltd. shall bear no responsibility for the lack of acquaintance of the site and other conditions or any information relating thereto, on their part. The consequences of the lack of any

knowledge as aforesaid on the part of the Bidders shall be at their risk and cost and no charges or claims whatsoever consequent upon the lack of any information, knowledge or understanding shall be entertained or payable by the ECGC Ltd.

3.14.6. The Bidder shall furnish with his tender:

a) The construction schedule showing all activities of work in details and in the form of Bar Chart proposed to be completed within the stipulated period duly signed as token of acceptance.
b) Details of equipment, Machinery and labour immediately available with the Bidder for deployment on the work.
c) Relevant information on the capacity, financial resources and experience about himself.

3.14.7. The time allowed for the carrying out of the work will be **90** (Ninety) Days from the date of written orders to commence the work.

3.14.8. The Bidders should quote for all the items of work as given in the bill of quantities. The rates shall be written in both the words and in figures. Bidder shall also show cost of each item, total of each subhead and, the Grand total of the whole contract. Corrections, if any, shall be made by crossing out, initialing dating and rewriting.

3.14.9. Canvassing in connection with tenders is strictly prohibited and the tenders submitted by the Bidders who resort to canvassing will be liable to rejection.

3.14.10. All item rates shall be quoted on the proper form of the tender alone.

3.14.11. An item rate tender containing percentage below/above will be summarily rejected. However, where a tenderer voluntarily offers a rebate for payment within a stipulated period. This may be considered.

3.14.12. On acceptance of tender, the name of the authorized representative(s) of the Bidder who would be responsible for taking instructions from the Employer/Architect shall be communicated to the Employer/Architect.

3.14.13. The contractor shall give a list of his relatives working with ECGC Ltd along with their designations and addresses.

3.14.14. No employee of the ECGC Ltd is allowed to work under or as a contractor for a period of two years after his retirement from ECGC Ltd services, without the Prior approval of the ECGC Ltd. Any bid is liable to be rejected if either the bidder or any of his employees is found at any time to be such a person who had not obtained the permission of the ECGC Ltd as aforesaid before submission of the tender or engagement in the bidder's service.

3.14.15. No Bidder who himself/themselves has/have filled bid may themselves sign as a witness. Failure to observe this condition would render bids of the Bidders signing as both bidder and a witness are liable to summary rejection.

3.14.16. It will be obligatory on the part of the Bidder to tender and sign the tender documents for all the component parts and that, after the work is awarded, he will have to enter in to an agreement with ECGC Ltd.

3.14.17. Sealed tenders are to be delivered in person to the Nodal contact person nominated for the purpose or put in a sealed tender box kept in the office before the stipulated time.

3.14.18. The 'Request for Tender' and all subsequent corrigenda/addenda shall form part of the Tender Documents.

SECTION –4

4. TERMS AND CONDITIONS OF CONTRACT (TCC)

4.1. DEFINITIONS:

In this Contract, the following terms shall be interpreted as indicated:

4.1.1. "The Company" means ECGC Limited.

4.1.2. Departmental Schedule, which means that unless otherwise stipulated all the work is to be done as per general conditions and general specifications as mentioned in the bill of quantities.

4.1.3. Architect: shall be the appointed Architect- M/s. KALAAKAR & ASSOCIATES having its office at 206, BM Tower, Sapna Sangeeta Road, Indore – 452 001 (M.P) in the event of his/their ceasing to be the Architects for the purpose of this contract such other persons as the Company shall nominate for the purpose.

4.1.4. "Vendor" is the successful Bidder whose financial Bid has been accepted and to whom notification of award has been given by the Company.

4.1.5. "The Services" means the scope of services which the Vendor is required to provide ECGC under the Contract.

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

4.1.7. "The Contract Price" means the price payable to the Vendor under the Contract for the full and proper performance of its contractual obligations.

4.1.8. "TCC" means the Terms and Conditions of Contract.

4.1.9. "The Project" means Interior & Furnishing, Civil, MEPF works of ECGC L.T.D. at 2nd Floor of Brilliant Centre, 17, Race Course Rd, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001

4.1.10. "The Project Site" means at 2nd Floor of Brilliant Centre, 17, Race Course Rd, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001

4.1.11. "Start date": When the contractor has to start the work; which shall be 7 days from the date of acceptance of tender award letter.

4.1.12. The Engineer in charge: The term means and refers to Architect as described in aforementioned clause who has been appointed to look after the renovation work.

4.1.13. Drawings: The work is to be carried out in accordance with drawings, specifications, the Bill of Quantities and any further drawings which may be supplied or any other instruction which may be given by the Company during the execution of the work.

4.1.14. All the drawings relating to work given to the contractor together with a copy of Bill of Quantities are to be kept at site and the Company &

Architects shall be given access to such drawings or Bill of Quantities whenever necessary.

4.1.15. In case any detailed drawings are necessary, contractor shall prepare such detailed drawings and/or dimensional sketches therefore and have it confirmed by the Company prior to taking up such work.

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

4.1.17. All drawings maintained on the site are to be carefully mounted on boards of appropriate size and laminated. They are to be protected from ravages of termites, ants and other insects.

4.1.18. Two copies of each of the drawings and one copy of each of the condition of contract specification tender preamble and bill of quantities will be provided for the use of the Vendor who must satisfy himself as to the accuracy of the said copies in every detail, and make all other copies necessary for the conduct of the work. Any comments on drawings to be given by the Vendor within 7 days from receiving of drawings.

4.1.19. One copy of each drawing or sketch furnished to the Vendor shall be kept in an office at the works and the Engineer or any person authorized by the Company shall have free access to the drawings and sketches whenever they desire

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

4.1.21. "Act of Insolvency" shall mean any act as such as defined by the Presidency Towns Insolvency Act or in Provincial Insolvency Act or any Amending Statutes.

4.1.22. "The Bill of Quantities" shall mean the Bill of Quantities as specified and forming part of this Request for Tender.

4.1.23. "Priced Bill of Quantities" shall mean the Bill of Quantities duly priced with the accepted quoted percentage of the contractor.

4.1.24. Order of precedence for any ambiguity in the Bill of Quantities, general conditions, special conditions, specifications and drawings for the Vendor shall be as per the decision of the Company and the same will be binding on the Contractor and shall be read as under in the decreasing order of importance.

a) Bill of Quantities.

b) Drawings.

c) Special Conditions.

d) General Conditions.

e) Technical Specifications of Contract.

f) C.P.W.D. specifications.

g) Bureau of Indian Standards specifications.

h) State P.W.D./General Engineering Practice.

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

4.2. SCOPE OF WORK:

Proposed Interior & Furnishing, Civil, MEPF works of ECGC's New branch premises in Indore includes furnishing all materials, labor, tools and equipment and management necessary for, and incidental to, the construction and completion of the work. All work, during its progress and upon completion shall confirm to the lines, elevations and grades as shown on the drawings furnished by the employer. Should any detail essential for efficient completion of the work be omitted from the drawings and specifications it shall be the responsibility of the contractor to inform the employer and to furnish and install such detail with employer's concurrence, so that upon completion of the proposed work the same will be acceptable and ready for use.

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

a) The variation or modification of the design quality or quantity of works or the addition or omission or substitution of any work. Should the Vendor desire to substitute any materials and workmanship, he/they must obtain the approval of the Architect/Company in writing for any such substitution well in advance. Materials designated in this specification indefinitely by such terms as "Equal" or "other approved" etc., specific approval of the Employer/Architect has to be obtained in writing.

b) Any discrepancy in the drawing or between the Bill of Quantities and/or drawings and/or specifications.

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

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

e) The dismissal from the work of any persons employed thereupon.

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

g) The rectification and making good of any defects under clauses hereinafter

mentioned and those arising during the maintenance period (Defect Liability period).

The contractor shall forthwith comply with and duly execute any work comprised in instructions contained herein, provided always that verbal instructions, directions and explanations given to the Vendor's or his representative upon the works by the employer shall if involving a variation be confirmed in writing to the Vendor/s within seven days. No works for which rates are not specifically mentioned in the priced Bill of Quantities, shall be taken up without written permission of the Architect/Company. Rates of items not mentioned in the priced Bill of Quantities shall be fixed by the Company in consultation with the Architects as provided in clause "variations".

4.3. DURATION:

The project, as per the scope of work should be completed within of 90 days from the issue of work order.

4.4. GENERAL CONDITIONS

a) Contract documents consist of Pro-forma for pre-qualification, detailed plans, technical specification, Bill of Quantities of the various classes of work to be done, and the set of 'conditions of contract' to be compiled with by the bidder whose Tender may be accepted. The document can be downloaded from our website.

b) All taxes or any other statutory obligation / tax on material or on finished works or any other additional tax etc. in respect of this contract, as applicable, shall be payable by Vendor including transportation and TA / DA of the workers at site and the Company shall not entertain any claim whatsoever in this respect.

c) Time is the essence of the contract. Proposed Interior & Furnishing, Civil, and MEPF works of ECGC's new premises in Indore shall be completed in 90 days from the issue of work order.

d) The Vendor shall comply with applicable laws, policies and regulations as stipulated by the Center/State/local Government.

e) No advance payment will be granted for the works proposed.

f) Vendor shall raise their Invoice on a monthly basis along with their expenditure claim duly certified by the Architect. The Company shall release the payment within 15 days of submission of the Invoice and the necessary documents and clarifications, if any. On completion of work, the accounts of the works shall be closed and a final statement shall be submitted for settlement along with refund/adjustment of excess payment received, if any, duly certified by the Architect.

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

h) The Successful Bidder shall supply the Architect & Company weekly with well executed photographs 4 (four) No. of size 200 x 250mm in duplicate showing the progress of the works and also such particular section of the works, site plan, machinery or materials as the Site Engineer may direct within quoted prices. Based on such Photographs, Architect shall provide necessary feedback and it shall be the responsibility of the Architect to direct the successful bidder for action to be taken based on photographs, if any.

4.5. SPECIAL TERMS AND CONDITIONS

4.5.1. Vendor to comply with company's rule and guidelines

Complying with Company's internal guidelines, instructions, manuals, scrutiny lists, procedures, further specifics and requirements ("**Guidelines**") in relation to the Services, as may be provided in writing by the Company to the Service Provider. However, in the event there is a conflict between the guidelines and the terms set out in the Agreement, the terms set out in the Agreement shall prevail.

4.5.2. Co-operation with other agencies and damages and safety of road users

All works are to be carried out in close co-ordination with the Architect and Company and contractor those may be working in the area of work. The work should also be carried out with due regard to the convenience of the common area users and other occupants of the building, if any. All arrangements and programme of work must be adjusted accordingly. All precautions must be taken to guard against chances of injury or accidents to workers, road users, occupants of the adjacent locality etc. The Vendor must see that all damages to any property which, in the opinion of the Architect are due to the negligence of the contractor are promptly rectified by the Vendor at his own cost and expenses and according to the direction and satisfaction of the Architect.

4.5.3. Transportation arrangement

The Vendor shall arrange for all means of transport required for carriage and supply of materials and also the materials required for the construction work, at its own cost. The Vendor will have to arrange at his own initiative so that progress of work does not get affected and no claim whatever on this ground will be entertained under any circumstances. The Vendor must consider this aspect while quoting rate.

4.5.4. Incidental and other charges

The cost of all materials, hire charges to tools and plants, labour, Company / Municipal Fees for water supply, Royalty on road materials (if any), electricity and other charges of Municipalities or statutory local bodies, ferry charges, Toll charges, loading and unloading charges, handling charges, overhead charges, etc. will be deemed to have been covered by the rates quoted by the Vendor inclusive of all statutory and levy/ cess will have to be borne by Vendor or bidder and his/ her quoted rate should be quoted after considering all these charges. All other charges for the execution of the specified work, including supply of materials and related carriage, complete or finished in all respect up to the entire satisfaction of the Architect of the work. No extra claim in this regard beyond the specified rate as per work schedule whatsoever in this respect will be entertained.

If the rates for the extra, altered or substituted or (deviated) work are not provided for (available) in the Bill of Quantities, they shall to the extent possible be derived out of rate given in that schedule for similar or near similar items. for the extra, altered or substituted (deviated) work of rates for the said similar or near similar items in the contract schedule, market rates substantiated by purchase bills/vouchers dependable printed price schedule of building materials of different type shall be adopted, using factors and constants for quantum of materials, labour, T & P and sundries, form standard analysis of rates adopted by the National Building Organization, Ministry of Works and Housing, Government of India in preparation of All India Standard Schedule of Rates, 1977/DAR and adding 15% over towards profit and overheads. When called upon to do so, the contractor shall submit the required purchase bills/vouchers.

Where extra work is of such a nature that it cannot be properly measured or valued the Vendor shall be allowed per day work priced at the net rates stated in the tender or the priced Bill of Quantities or if not so stated then in accordance with the minimum local day work rates and wage for the district notified by the concerned authority provided that in either case if required by the Architects, vouchers, muster rolls and other documents, required for proper verification of the labour employed and the materials **deployed on the said work and the costs thereof be delivered to the Site Engineer, or Architect on** or before the end of the week following that in which the work has been executed.

The question as to whether extra work is of such nature that it cannot be properly measured or valued will be decided by the Architects and Employer.

4.5.5. Duties of the Vendor

4.5.5.1. No assignment/sub-contracting by the vendor **-**

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

4.5.5.2. Authorized representative of the Vendor - The contractor, may however, appoint and authorize representative in respect of one or more of the following purposes only: a) General day to day management of work. b) To give requisition for Departmental materials, Tools etc., if any, to receive the same and sign hand receipts thereof. c) To attend measurements when taken by the ECGC's Officers and sign the records of such measurements which will be taken upon acceptance by the Vendor.

4.5.5.3. Vendor's Employees: The Contractor shall employ technically qualified and competent supervisors for the work who shall be available (by turn) throughout the working hours to receive and comply with instructions of the Employer/Architects. The contractor shall engage at least one experienced Engineer to co-ordinate with site-in-charge for execution of the work. The contractor shall employ in connections with the work persons having the appropriate skill or ability to perform their job efficiently. The contractor shall employ local laborers on the work as far as possible. No laborers below the age of sixteen years and who is not an Indian National shall be employed on the work. Any laborer supplied by the contractor to be engaged on the work on day work basis either wholly or partly under the direct order or control of the Employer or his representative shall be deemed to be a person employed by the contractor.

The Vendor shall arrange to provide first aid treatment to the laborers engaged on the works. He shall within 24 hours of the occurrence of any accident at or about the site or in connection with execution of the works, report such accident to the employer and also to the competent authority where such report is required by law.

4.5.6. Completion of the project

For cogent reasons over which the Vendor will have no control and which will slow down the progress, contractor shall maintain hindrance record, duly signed by the Architect, on same day of such occurrence / event, and approved by company.

Extension of time for the period lost may be granted on receipt of application from the Vendor before the expiry date of contract. No claim whatsoever for idle labour, additional establishment, enhanced cost of materials and labour and hire charges of tools & plants etc. would be entertained under any circumstances. The Vendor should consider the above factor while quoting this rate.

4.5.7. Supplementary / additional items of works

No Additional/supplementary work/item, other than work/items mentioned in the printed tender be carried out by the contractor. Prior approval of the Architect and Company is to be obtained, if any additional/supplementary work/item arises during execution of the work, which was not mentioned in the printed tender. Rates for such additional/supplementary work shall be fixed as per the similar comparable item rate quoted in the Bill of Quantities or nearest comparable CPWD schedule**.**

Deviation Limit for Tender Quantities beyond 25%**:** The tender rates shall hold good for any increase in the tendered quantities up to variation of 25%. In case tender quantities of an individual item exceeds the deviation limit of 25%the rates for the excess quantities over and above the deviation limit shall be payable as per market rate analysis, sustained by purchase vouchers/bill using constant only of materials, labour, T & P etc. from all Indian Standard analysis of rates published by NBO/DAR with 15% contractor's profit and overheads. For non-schedule items, constant of material, labour, T & P etc. shall be decided by the Engineer in-charge of Employer, and Architect based on the actual observation at site.

4.5.8. Approval of sample/ OEM vendors

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

4.5.9. Drawings

All works shall be carried out in conformity with the scope of work and in consultation of the project architect.

4.5.10. Serviceable materials

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

bill at rates as will be assessed by the Architect.

4.5.11. Unserviceable materials

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

4.5.12. Idle labour & additional cost

Whatever may be the reason no claim on idle labour, enhancement of labour rate additional establishment cost, cost of Toll and hire and labour charges of tools and machines etc. would be entertained under any circumstances.

4.5.13. Charges and fees payable by vendor

a) The contractor shall pay all fees required to be given or paid by any statute or any regulation or by-law of any local or other statutory authority which may be applicable to the works and shall keep the ECGC protected against all penalties and liabilities of every kinds for breach of such statute regulation or law.

b) The Contractor shall save, protect and indemnify the ECGC from and against all claims, demands, suit and proceedings for and/or an account of infringement of any patent rights, design, trade mark of name of other protected right in respect of any constructional plant, machine, work, materials, thing or process used for or in connection with works or temporary works or any of them.

4.5.14. Issue of ECGC's tools and machines

i. All Tools and machines required for the work will have to be supplied by the Vendor at his own cost; all cost of fuel etc. for proper running of the Tools and machines must be borne by the Vendor.

ii. The Vendor shall provide and maintain proper sheds for the proper storage and adequate protection of the materials etc., and other work that may be executed on the site including the tools and materials and remove same on completion.

4.5.15. Realization of ECGC's claims

Any sum of money due and payable to the Vendor (including the Retention money) under this contract may be appropriated by the Company and set off against any claim the Company for the payment of sum of money arising out of this tender or under any other contract made by the Vendor with the Company.

4.5.16. Intellectual Property Law

All the manuals, guidelines, documents, drawings etc. provided by company shall be treated as Confidential information by the Vendor and existing intellectual property rights of the Company therein shall continue to vest with the Company.

4.5.17. Relationship between company and vendor

The relationship between Company and Vendor is solely that of an independent contractor and the relationship is on a principal-to-principal basis.

4.5.18. Compliance with applicable Laws

The vendor shall comply with all applicable laws, rules and regulations including, but not limited to the provisions of the Payment of Wages Act, Employer's Liability Act, workmen's Compensation act, Apprentices Act, 1961, Minimum Wages Act, 1848. Contact Labour (Regulation and Abolition) Act 1970 and the rules and orders issued thereunder from time to time. The Vendor shall also make himself liable for any pecuniary liabilities arising out on account of any violation of the provision of the said Act(s). The Vendor must obtain necessary certificate and license from the concerned Registering Office under the Contract Labour (Regulation & Abolition) Act, 1970. The Vendor shall be bound to furnish to the Company all the returns, particulars or date as are called for from time to time in connection with implementation of the provisions of the above Acts and Rules and timely submission of the same, failing which the Vendor will be liable for breach of contract and the Company may at his discretion take necessary measures over the contract.

4.5.19. Safety, Security and Protection of the Environment

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

(a) Have full regard for the safety of all persons and the Works (so far as the same are not completed or occupied by the Company),

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

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

(d) Vendor should provide a Contractor All Risk (CAR) Policy.

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

4.5.20. Commencement Of Work

The work must be taken up within 07 days of issuance of work order.

4.5.21. Programme of work

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

4.5.22. Setting out of the work

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

4.5.23. Precautions during works

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

4.5.24. Testing of qualities of materials & workmanship

i. All materials and workmanship shall be in accordance with the specifications/BOQ laid down in the contract. The Vendor shall provide such assistance, instrument, machine, labour and materials as the Architect may require for examining, measuring and testing the works and quality, weight or quantity of materials used and shall supply samples for testing as may be selected and required by the Architect without any extra cost.

ii. All the works specified and provided for in the specifications or which may be required to be done in order to perform and complete any part thereof shall be executed in the best and most workman like manner with materials

of the best and approved quality of the respective kinds in accordance with the particulars contained in and implied by the specifications and as represented by the drawings or according to such other additional particulars and instructions as may from time to time be given by the Company as proposed by Architect during the execution of the work, and to its entire satisfaction

iii. All the materials (except where otherwise described) stores and equipment required for the full performance of the work under the contract must be provided through normal channels and must include charge for import duties, sales taxes, octroi and other charges and must be the best of their kind available and Vendor must be entirely responsible for the proper and efficient carrying out of the work. The work must be done in the best workman like manner. Samples of all materials to be used must be submitted to the Company through Architect when so directed by the Engineer/Architects and written approval from Architect must be obtained prior to placement of order. The approved samples shall be kept with the Company till the completion of work.

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

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

4.5.25. Timely completion of work

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

4.5.26. Procurement of materials

All materials required to complete execution of the work shall be supplied by the Vendor after procurement from authorized and approved source.

4.5.27. Rejection of materials

i. All materials brought to the site must be as per the Bill of Qualities. Materials to be approved as per clause 4.5.9 and clause 4.5.25. Rejected materials if

any, must be removed by the Contractor from the site within 24 hours of the issue of order to that effect. In case of non-compliance of such order, the Company shall have the authority to cause such removal at the cost and expense of the contractor and the Vendor shall not be entitled to claim for any loss or damage on that account.

ii. Removal of Improper Work: The Company 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 times as may be specified in the order of any materials which in the opinion of the Company/Architect are not in accordance with specification or instructions, the substitution or proper re-execution of any work executed with materials or workmanship not in accordance with the drawings and specifications or instructions. In case the Vendor refuses to comply with the order the Company shall have the power to employ and pay other agencies to carry out the work and all expenses consequent thereon or incidental there to as certified by the Company shall be borne by the Vendor or may be deducted from any money due to or that may become due to the Vendor. No certificate which may be given by the Architects shall relieve the Vendor from his liability in respect of unsound work or bad materials.

4.5.28. Implied elements of work in items

No separate charges shall be paid for traffic control measures, shoring, shuttering, dewatering, curing etc. and the rates of respective items or works are to be deemed as inclusive of the same.

4.5.29. Damaged cement / equipment / basic materials.

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

4.5.30. Tender rate

The Vendor should note that the contract is strictly based on the rates quoted by the Vendor on the priced schedule of probable item of work. The quantities for various other items of works as shown in the priced schedule of probable items of works. No deviations/conditional rate will be allowed in any case.

4.5.31. Additional conditions

A few additional conditions under special terms and conditions:

1) Rate quoted shall be inclusive of clearing site including removal of surplus (both serviceable & unserviceable) earth, rubbish, materials, debris etc. as

per direction of the Architect.

2) Rate quoted shall be inclusive of all Statutory taxes and cess etc. and all other duties except GST. GST shall be added at the end of total of amount quoted. TDS deduction shall be applicable as per government regulation applicable for contractor payment. The certificate in respect of TDS shall be issued by Company as per rate. No claim whatsoever on this account shall be entertained.
3) Labour welfare Cess and all other cess are to be borne by the contractor.
4) The whole work will have to be executed as per Annexure J to M available in this connection at the tender rate.
5) Clearing Site and Setting out Works: The Vendor shall set out the works and shall be responsible for the true and perfect setting out of the work and for the correctness of the positions, levels, dimensions and alignment of all parts thereof. If at any time, any error shall appear during the progress ofany parts of the works, the Vendor shall at his own expenses rectify such error, if called upon to the satisfaction of the Company. The Vendor shall further set out the work to the alternative positions at the site until one is finally approved and the rates quoted in his tender should include for this and no extra on this account will be entertained.
6) Clearing Site on Completion: On completion of the works, the contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and the works clean and in a workmanlike condition to the satisfaction of the Employer and Architects.
7) Access to Authorized representative: Any authorized representative of the Company and Architect shall at all reasonable times have free access to the works and/or to the workshops, factories or other places where materials are being prepared or constructed for the work and also to any place where the materialsare lying or from where they are being obtained, and the Vendor shall give every facility to the Company or their representatives necessary for inspection and examination and test of the materials and workmanship. Except the representatives of the Company and Architect, no person shall be allowed at any time without the written permission of the Company.
8) Concealed Work: The Vendor shall give due notice to the Company and Architects whenever any work is to be buried in the earth, concrete or in the bodies of walls or otherwise becoming inaccessible later on, in order that the work may be inspected and correct dimensions taken before such burial, in default whereof the same shall, at the option of the Architect be either opened up for measurement at the contractor's expense or no payment may be made

for such materials. Should any dispute or differences arise afterthe execution of any work as to measurements etc., or other matters which cannot be conveniently tested or checked, the notes of the Employer shall be accepted as correct and binding on the contractor.

4.6. Payments

4.6.1. Payment shall be made via electronic fund transfer only to the bank account specified, as per the form provided under Annexure-F in the tender response.

4.6.2. The works will be paid for as "measured work" on the basis of actual work done and not as "lump sum" contract.

4.6.3. All bills shall be submitted by the Vendor in the form prescribed by the Company. Normally one interim bill shall be prepared each month subject to minimum value for interim certificate as stated in these documents. The bills in proper forms must be duly accompanied by detailed measurements in support of the quantities of work done and must show deductions for all previous payments, retention money etc. The bill shall be checked at site by Site Engineer and thereafter the Architect shall issue a certificate after due scrutiny of the Vendor's bill which may be further verified by the Company and the Vendor shall be entitled to payment thereof, within a period of 30 days of honoring the interim certificates named in these documents, as per final verified amount by the Company. Such certificate shall only include the value of said material and goods as and from such time as they are reasonably, properly required and not prematurely brought to or placed adjacent to the work.

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

4.6.5. The payment shall be released on proper submission of the Invoice together with the measurements of the work carried out. The retention money, other statutory deductions and any other amounts as may be deductible / recoverable as per the terms and conditions of contract shall be deducted from the running bills.

4.6.6. 10% of the value of each running bill shall be deducted as Retention Money, till the amount so accumulated equals 10% of the work order. The Retention Money shall be refunded after Defect Liability Period of one (1) year from the date of completion of works, provided all defects are attended satisfactorily

4.6.7. The final bill will be released on satisfactory completion of the entire work and compliance of all the terms and conditions / obligations mentioned and on proper submission of the bill together with the measurements. The Vendor has to submit Insurance policy (Contractor All Risk Policy valid till end of Defect Liability Period (DLP) from IRDAI approved Insurance Company. The period of Final Measurements will be One Month from date of Completion, The final bill shall be accompanied by a certificate of completion from the Architect, payments of final bill shall be made after deduction of Retention Money as specified in clause 4.6.6 of these conditions, which sum shall be refunded after

the completion of the Defects Liability Period after receiving the Company and Architect's certificate that the contractor has rectified all defects to the satisfaction of the Company and Architect. The acceptance of payments of the final bill by the contractor would indicate that he will have no further claim in respect of the work executed.

4.6.8. It may be noted that ECGC will not pay any amount / expenses / charges/ fees / travelling expenses / boarding expenses / lodging expenses / conveyance expenses / out of pocket expenses other than the agreed amount as per the purchase order / contract.

4.6.9. Any decrease in taxes must be passed on to ECGC.

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

4.6.11. No mobilization Advance and secured Advance will be allowed.

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

4.7. Liquidated Damages

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

4.8. Termination

In the event of any material breaches committed by the Vendor in breach of its obligations under the Contract, ECGC shall give written notice of breach to the Vendor. If the Vendor does not cure the breach, at its sole expense, within 30 days after the delivery of written notice, ECGC terminate the Contract. In such a case, the company may invoke the PBG given by the Vendor. ECGC shall not be obligated to pay the Vendor for any such terminated services performed or expenses incurred after the effective date of such termination.

a) The Company may terminate all or any part of the Contract at any time during the term without assigning any reason, by giving 15 days' prior written notice to the Vendor.

b) In the event of termination, Company's liability shall be to the extent of the work already rendered by the Vendor and availed by Company under this Contract.

4.9. Defect Liability Period:

Defect Liability Period is 12 months from the date of satisfactory completion of the work, as certified by the Architect, unless otherwise specified.

4.10. Indemnity

Vendor shall indemnify, defend and hold harmless the Company from and against any and all liability, losses, costs and expenses (including reasonable attorney's fees) relating to or arising out of the breach of this Agreement, the negligence or willful misconduct of Vendor or its employees or agents. No party shall however not be liable for any loss or damage arising from reliance on any information or materials supplied by the other party or any third party on behalf of the other party, or for any inaccuracy or other defect in any information or materials supplied by the other party or any third party on behalf of the other party. In addition to this, the vendor shall keep the Company saved, harmless and indemnified against claims if any of the workmen or any other person and all costs and expenses as any be incurred bythe Company in connection with any claim that may be made by any workman or any other person.

4.11. GOVERNING LAW AND JURISDICTION

The Courts in Indore shall alone have jurisdiction for the purposes of adjudication of any dispute or differences whatsoever in respect of or relating to or arising out of or in any way touching the works awarded or the terms and conditions of the Contract.

4.12. SURVIVAL

The termination of the Contract shall not affect the rights of and or obligations of the Vendor which arose prior to the termination.

4.13. Force Majeure

Notwithstanding the provisions of Contract, the Vendor shall not be liable for, liquidated damages, or termination for default, if and to the extent, that, the delay in performance, or other failure to perform its obligations under the Contract, is the result of an event of Force Majeure.

For purposes of this clause, "Force Majeure" means an event beyond the control of the Vendor and not involving the Vendor's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Company in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

If a Force Majeure situation arises, the Vendor shall promptly notify the Company in writing of such condition and the cause thereof. Unless otherwise directed by the Company in writing, the Vendor shall continue to perform its obligations under the Contract as far as is reasonably practical and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

4.14. ENTIRE AGREEMENT

It is expressly agreed between the parties that the bid received from the successful bidder along with its annexures, Tender Award Letter, Request for Tender, any addendum or corrigendum issued thereafter, and the completed Annexures thereto constitute the Entire Agreement between the Parties.

4.15. Royalties and Patents

Any royalties or patents or the charges for the use or infringement thereof that may be involved in the contract shall be included in the price. Bidder shall protect the Company against any claims thereof.

4.16. Confidentiality and non-disclosure: -

a) The Vendor and/or its personnel shall keep confidential at all times any/all information that is shared by the Company or has come to their knowledge during the performance of Services under the Contract.
b) The Company shall be deemed to be the owner of all Confidential Information. The Vendor will use the Company's Confidential Information solely to fulfil its obligations as part of and in furtherance of this service contract.
c) The Vendor shall not use the Confidential Information in any way that is directly or indirectly detrimental to the Company or its subsidiaries or affiliates, and shall not disclose the Confidential Information to any unauthorized third party.
d) The Vendor shall not disclose any Confidential Information to any person except to its employees and consultants, on a need-to-know basis, who have prior to the disclosure of or access to any such Confidential Information agreed in writing to receive it under terms as restrictive as those specified in this Agreement. Prior to disclosing any Confidential Information to such person/s, the Vendor shall inform them of the confidential nature of the information and their obligation to refrain from disclosure of the Confidential Information.

e) The Vendor shall use the same degree of care in safeguarding the Confidential Information as it uses or would have used in safeguarding its own Confidential Information, and shall take all steps necessary to protect the Confidential Information from any unauthorized or inadvertent use.

4.17. Representation And Warranties

i. Vendor shall be required to comply with statutory and regulatory requirements as imposed by various statutes, labour laws such as (a) Contract Labour (Regulation Abolition) Act, 1970, (b) Apprentice Act, 1961, (c) Minimum Wages Act, 1948 etc., local body rules, state and central Government Body statutes, and any other regulatory requirements applicable on the Vendor, and shall produce the same for records of ECGC Limited and / or its Auditors and / or its regulator on demand.

ii. Successful Bidder shall be required to obtain valid Registration Certificate & Labour License from respective Regional Labour Offices where construction work by them is proposed to be carried out.

iii. The Vendor shall give all notices required by said act, rules, regulations and Byelaws etc. and pay all fees payable to such authorities for execution of the work involved. The cost, if any, shall be deemed to have been included in his quoted rates, taking into account all liabilities forlicenses, fees for footpath encroachment and restorations etc. He shall indemnify the Company against such liabilities and shall defend all actions arising from such claims or liabilities.

iv. The Vendor are required to take *Contractor's All risk Insurance Policy* (CAR Policy) and Workmen Compensation Policy with respect to the work and the workmen within 15 days from the receipt of work order with an IRDA approved Insurance Company in the name of the Vendor from the date of commencement of work till the certification of satisfactory completion of work duly certified by the Architect. The value of the work to be insured would be 125% of the contract value for CAR Policy.

v. The CAR policy should have additional coverage under 3rd party liabilities. The liabilities should be one lakh rupees per accident. The premium receipt and the policies should be submitted to COMPANY. The contractor shall fully indemnify the COMPANY against all claims which may be made against the COMPANY by any member of the public or other third party in respect of anything which may arise in respect of the works or in consequence thereof. The contractor shall also fully indemnify the COMPANY against all claims which may be made upon the COMPANY, whether under the WORKMENs' COMPENSATION ACT or any STATUTE in force during the currency of this contract or at common law in respect of any employee of the Vendor or any sub- contractor. The Vendor shall be responsible for anything which may be excluded from the insurance policies above referred to.

vi. The Vendor shall also fully indemnify the COMPANY in respect of any cost, charges or expenses arising out of any claim or proceedings at law and also in respect of any award of compensation of damages arising there from.

vii. The Company 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 or damage from any sum or sums due or to become due to the contractor.

viii. Successful Bidder or Vendor shall be required to observe the following conditions strictly:

a) Employees' Provident Fund and Miscellaneous Provisions Act, 1952 and Employees State Insurance Act,1948 should be strictly adhered to wherever such Acts become applicable.

b) Minimum wages to the workers shall be paid according to the rates notified and/or revised by the State Government from time to time under the Minimum Wages Act, 1948 in respect of scheduled employments, within the specified time as per law. Payment of bonus, wherever applicable, has to be made.

c) Adequate safety and welfare measures must be provided as per the provisions of the building and other Construction acts applicable in Indore.

d) All liabilities arising out of engagement of workers are duly met before submission of bills for payment. If there is any violation of any or all the relevant above criteria during execution of the job, it will render the concerned agencies ineligible for the work then and there or at any subsequent stage as may be found convenient.

ix. The Vendor shall employ "A" grade License holder Electrical contractor to complete the electrical work in the scope of the tender.

x. Specialists Works: The Vendor must associate himself with the specialist firm to be approved by the Company in writing for wooden flooring and for Electrical works are to be executed by specialist firms. The names of the firms to be informed at the time of bidding itself.

xi. VENDOR TO PROVIDE EVERYTHING NECESSARY:

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

b) The rates quoted against individual items will be inclusive of everything necessary to complete the said items of work within the contemplation of the contract and beyond the unit price. No extra payments will be allowed

for incidental or contingent work, labour and/or materials inclusive of all taxes and duties whatsoever except for specific taxes, if any, stipulated in the tender documents.

c) The contractor shall supply, fix and maintain at his own cost for the execution of any work, all tools tackles, machinery and equipment's and all the necessary scaffolding, 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 safety of any adjacent roads, streets, walls, houses, buildings, all other erections, matters and things and the Vendor shall take down and remove any or all such scaffolding, etc. as occasion shall be required or when ordered to do so and shall fully reinstate and make good all matters and things distributed during the execution of works to the satisfaction of the Company/Architect.

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

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

4.18. Control records

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

a) Daily progress record.
b) Work site order book
c) Instruction by Company's Officers.
d) Test registers of other materials/fittings fixtures equipment's as stipulated in the tender.
e) Register of drawings and working details.
f) Log book of defects.

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

h) Dismantled materials account register.

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

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

k) IS: 1200 relating to measurements.

l) Conversion Table IS 786.

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

4.19. Labour Records:

The contractor shall maintain relevant records and fulfill all conditions and requirements in accordance with the following Act and Rules made hereunder.

(a) The Payment of Wages Act.

(b) Employer's Liability Act.

(c) Workmen's Compensation Act.

(d) Contract Labour (Regulation & Abolition) Act, 1970 and Central Rules 1971.

(e) Apprentices Act 1961.

(f) Minimum wages Act 1948.

(g) disputed Act 1947.

(h) Maternity benefit Act 1961.

(i) ESI Act.

(j) Payment of Bonus Act.

(k) Payment of Gratuity Act.

(l) Any other Act or enactment relating thereto and rules framed thereunder from time to time.

SECTION-5

PART: 1 – TECHNICAL BID

ANNEXURE – A

Company/Firm/Individual Profile / Eligibility / Technical/Pre-qualification Bid

Sr No	Description	Details	
1	Name of the Company/Firm/Individual		
2	Legal Status (eg. Proprietorship, Partnership, Limited Liability Partnership, Company etc.	<Certified copy of the Certificate of Incorporation of Company issued by the Registrar of Companies / Partnership Deed etc. to be attached>	
3	Registered Physical Address		
4	Correspondence Address		
5	Business profile of the company/firm (attach a separate write-up or brochure regarding business activities of the company/firm)		
6	Date of incorporation		
7	Board of Directors / Management / Promoters / Partners/ Proprietor	(i)	
		(ii)	
		(iii)	
		(iv)	
		(v)	
8	Contact Person Details (Name, Landline and mobile Number, e-mail id)		
9	E-mail id of the bidder,		
10	PAN of the bidder	<copy required>	
11	TIN of the bidder	<copy required>	
12	GST Registration No.	<copy required>	
13	Work experience in similar nature of work in terms of Clause 3.2.1	< Evidences in form or work Completion certificates should be provided along with the bid. >	
14	Annual turnover for the last five financial years.	< IT returns acknowledgments and / or Audited Financial Statements / statements certified by Chartered Accountants to be provided for last five financial years ending	

		on 31.03.2024.
15	Power of Attorney/authorization for signing the bid documents, if applicable.	
16	The Bidder should not have been blacklisted / barred / disqualified by any Govt. Financial Institutions / Banks / Government / Semi-Government departments/ regulator / statutory body/ judicial or any other authority in India.	< A self-declaration by the Bidder on its letter head.>
17	The Bidder's Firm should not be owned or controlled by any Director or Employee of ECGC Ltd.	< A self-declaration by the Bidder on its letter head.>
18	Projects taken up and completed during last 5 years	Details
19	Any project not completed due to any reason in last 5 years	Details
20	Ongoing Projects	Number : Value : Details: Start date : Name of party/entity : Nature of work :
21	Any penalty imposed for delay or no-completion in past 5 years	Details
22	Status of ongoing/ completed litigation & arbitration related to projects	Details
23	Project Site Visited and Report Attached	

……

Signature of the authorized Signatory of Company/Firm/ Individual
(Company Seal)
Name:
Date:
Designation:
Contact No (Mobile)
Fax No.:
Email Id

ANNEXURE-B

FORM OF TENDER (Ref: ECGC/Indore/Admn/P/2026/1)

To,
The Branch Manager,
ECGC LTD. Indore
Date:

NAME OF WORK: Proposed Interior & Furnishing, Civil, MEPF works of ECGC L.T.D. at 2nd Floor of Brilliant Centre, 17, Race Course Rd, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001

Sir,

1. Having visited the site and examined the Request for Tender including drawings, conditions of contract, special conditions of contract, General specifications and detailed specifications, schedules and bill of quantities for the construction of the above named works, we offer to construct, complete and maintain the whole of the said works in conformity with the said Notice Inviting Tender including drawings, conditions of contract, specifications, schedules and bill of quantities for the sum stated in bill of quantities of this Tender Document or such other sum as may be ascertained in accordance with the said conditions of contract.
2. We undertake to complete and deliver the whole of the works comprised in the contract within the time stated in the Schedule of Events mentioned under Notice Inviting Tender hereto.
3. We have independently considered the amount of liquidated damage shown in the Appendix hereto and agree that it represents a fair estimate of the loss likely to be suffered, by you in the event of the works not being completed in time.
4. We agree to abide by this tender for the period of 120 days from opening of envelope 2 or extension there of as required by the Company from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiry of that period.
5. We confirm that the period and rates as referred in the agreement or general conditions of contract that are given in Notice Inviting Tender including hereto, to which we give our consent and agree to abide by the same.
6. If this tender is accepted, we undertake to enter and execute at our cost, when called upon by the employer to do so, a contract agreement in the prescribed form. Unless and until a formal agreement is prepared and executed, this tender together with your written acceptance thereof, shall constitute a binding contract between us.
7. We understand that if our tender is accepted, we are to be responsible for the due

performance of the contract.

8. We understand that you are not bound to accept the Lowest or any tender you may receive and may reject all or any tender, accept or entrust the entire work to the contractor or divide thework to more than one contractor without assigning any reason or giving any explanation whatsoever.

Name
Designation
in the capacity of_____
duly authorized to sign tenders for and on behalf of

_____
(IN BLOCK CAPITALS)
Witness: Signature/ Address:

APPENDIX TO FORM OF TENDER

Time of completion	90 Days from the date of issue of work order
Period of Final Measurement	One months from the date of virtual completion
Liquidated damages	0.5% of the tendered amount shown in the tender per week subject to the ceiling of 10% of the accepted contracted sum.
Initial security deposit	2% of the accepted tender value including earnest money
Retention percentage	10% of the accepted tender amount subject to maximum as per clause
Refund of total security comprising of EMD, ISD and Retention	The initial security deposit comprising of EMD, shall be refunded to the successful bidder and retention contractor within 14 days of the issue of certificate of Virtual completion. The retention amount will be refunded to the contractor 14 days after the end of the defect liability period.

Period of honoring Certificate	15 days from date of receipt of certificate from the Architect.

Defects Liability period	12 Months
Date of commencement	07 days from the date of acceptance letter is issued to contractor or day on which the contractor is instructed to take possession of the site whichever is later.

ANNEXURE-C

DRAFT OF AGREEMENT

THIS CONTRACT ("Agreement") is made and executed in indore……., on this ____day of _____, 2026

BY AND BETWEEN

ECGC Limited, a Public Sector Enterprise wholly owned by Govt. of India and a company duly incorporated under the provisions of the Companies Act, 1956 having Corporate Identity Number U74999MH1957GOI010918 and PAN No. AAACE296K having its office at ECGC L.T.D. at 408, City Centre 4th Floor, 570 MG Road, Indore – 452 001 (M.P.), hereinafter referred to as "The Company" through its authorized representative Shri Vikas Kumar Patkar, Branch Manager (which expression shall unless it be repugnant to the context or meaning thereof be deemed to mean and include its successors in business and assigns) of the **FIRST PART**.

And

_____, a Company/ Firm, with PAN No…….. and having its Office at_____hereinafter referred to as "**The Vendor**" through its authorized representative _____(which expression shall unless it be repugnant to the context or meaning thereof be deemed to mean and include its successors in business and assigns) on the **OTHER PART**.

Both the Vendor and the Company shall individually be referred to as Party and collectively be referred to as Parties.

WHEREAS:

A. The Company is in the business of providing credit risk insurance and related services for exporters and banks and has several branch offices all over the country. The Company is intending to engage services for Proposed Interior & Furnishing, Civil, MEPF works of ECGC L.T.D. at 2nd Floor of Brilliant Centre, 17, Race Course Road, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001 **("Purpose"):**

B. The Vendor has represented to the Company that it has the requisite expertise and resources to provide the Services and has come out as the Successful bidder to the Tender having (Reference no: **ECGC/Indore/Admn/P/2026/1)**

C. Based on such representations, the Company has engaged the Vendor to perform the Purpose, and the Vendor has agreed to provide such professional Services to the Company, as per the terms of this Agreement.

NOW THESE PRESENT WITNESSETH AND IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

1. AGREEMENT PERIOD:
   a. The term of the Services shall be valid and operative for a period of 90 days, commencing with effect from …… till …… unless terminated earlier in accordance with the provisions of this Agreement.
   2. SCOPE OF SERVICES:
      As mentioned at Clause 4.2 of Section 4 of TCC and Annexure – K of the RFT document
   3. NOTICES:

      All notices, requests and other communications to any Party hereunder shall be in writing either by hand delivery/postal/courier to their respective addresses mentioned above or through designated email as hereunder and will be deemed to have been duly given when received.;

      For Vendor:

      For Company**:** ECGC L.T.D. at 408, City Centre 4th Floor,570 MG Road, Indore – 452 001 (M.P.) Email ID: indore@ecgc.in;

   4. Both the Parties agree to the conditions mentioned in the Tender Document dated 20-01-2026 under Reference no **ECGC/Indore/Admn/P/2026/1** Such Tender document shall form part of this agreement and all terms and conditions mentioned in the said RFT document, its corresponding annexures, documents, any subsequent corrigenda/addenda etc. shall be read as part and parcel of this contract between the parties.

   5. Both Company and Vendor shall sign such further and other documents, cause such meetings to be held, resolutions passed and do and perform and cause to be done and performed such further and other acts and things as may be necessary or desirable in order to give full effect to this Agreement and every part thereof.

IN WITNESS WHERE OF THE PARTIES HERETO HAVE HEREINTO SET AND SUBSCRIBED THEIR RESPECTIVE HANDS AND SEALS, THE DAY, THE MONTH AND THE YEAR FIRST HEREINABOVE WRITTEN.

Signed, sealed and delivered in presence of:

On behalf of ECGC Ltd.	On behalf of Vendor
Signature_____ Name: Designation Address: Witness Signature_____ Name: Address:	Signature_____ Name: Designation Address: Witness Signature_____ Name: Address:

ANNEXURE-D

ANNUAL TURNOVERS FOR THE LAST FIVE FINANCIAL YEARS

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

S. No.	Financial Year	Turnover from renovation and repairing work (Rs in Lakhs)	Turnover from all other sources (Rs in Lakhs)	Remarks
1	2020-21			
2	2021-22			
3	2022-23			
4	2023-24			
5	2024-25			

Note:

1. Please attach certified copies of the latest Income Tax, Balance Sheet and Profit & Loss account statement to support the information furnished, failing which your firms shall be summarily disqualified.
2. Where copies are required to be furnished, the same are to be self-certified.
3. Additional sheets may be used for providing information and the same shall be signed and stamped by the Tenderer.

SIGNATURE OF THE BIDDER(S) / VENDOR WITH SEAL

DATE:

ANNEXURE-E

EXPERIENCE PROFILE DETAILS OF SIMILAR WORKS AND ALL WORKS COMPLETED IN LAST FIVE YEARS

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

NOTE:

i. Contractor must enclose the work completion letter or certificate issued by competent authority [Required in Reference to description on Technical/Pre-qualification / Financial Evaluation.] of tenderee of earlier works. Any other letter such as work order copies, running bill advises, architect's letters etc. shall not be accepted as proof of having completed the works.

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

SIGNATURE OF THE BIDDER(S) / VENDOR WITH SEAL
DATE:

ANNEXURE – F

BANK DETAILS OF THE BIDDER

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

……
Signature of the authorized Signatory of Company/Firm/Proprietor
(Company Seal)
Name:
Designation:
Contact No (Mobile)
Email Id

ANNEXURE G

Format for Letter of Authorization
(To be submitted on the Bidder's letter head)

To
Regional Manager,
ECGC Ltd.

Proposed Interior & Furnishing, Civil, MEPF works of ECGC L.T.D at 2nd Floor of Brilliant Centre, 17, Race Course Rd, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001

Letter of Authorisation for Attending Bid Opening for Tender (Ref: ECGC/Indore/Admn/P/2026/1)

Any one of the following persons is hereby authorized to attend the bid opening on _____(date) in the tender for work : Proposed Interior & Furnishing, Civil, MEPF works of ECGC L.T.D. at at 2nd Floor of Brilliant Centre, 17, Race Course Rd, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001 . The address for bid opening : ECGC L.T.D. at 408, City Centre 4th Floor,570 MG Road – 452 001 Indore (M.P.) mentioned on behalf of M/S_____ (Name of the Bidder) in the order of preference given below:

Order of Preference Name Designation Specimen Signature

I

II

(Authorized Signatory of the Bidder)

Date_____

(Company Seal)

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

ANNEXURE H

AFFIDAVIT

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

1. I,_____

the under-signed do certify that all the statements made in the attached documents for the Proposed Interior & Furnishing, Civil, MEPF works of ECGC L.T.D. at 2nd Floor of Brilliant Centre, 17, Race Course Road, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001 are true and correct. In case any information submitted proved false or concealed, the application may be rejected and no objection / claim will be raised by the under-signed.

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

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

4. Certified that I have applied in the tender in the capacity of individual / as a partner of a firm & I have not applied severally for the same tender.

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

_____

Signature of the declarant identified by me

_____

Signature of Advocate

_____

Seal & Signature of Notary

ANNEXURE - I

Date of Visit:

Project: Interior & Furnishing, Civil, MEPF works of ECGC Ltd.

Location: at 2nd Floor of Brilliant Centre, 17, Race Course Road, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001

Owner: ECGC LTD.

CERTIFICATE OF SITE VISIT BY BIDDER

This is to certify that I/We have sufficiently and fully familiarized ourselves with the site of Proposed Interior & Furnishing, Civil, MEPF works of ECGC L.T.D. at 2nd Floor of Brilliant Centre, 17, Race Course Rd, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001

_____Name of Firm/ Representative.

This is to certify that:

_____
_____

Name of Firm/Representative

has conducted a thorough visit of the site related to the proposed Interior & Furnishing, Civil, MEPF works of ECGC L.T.D. Indore.

For ECGC Ltd.

_____
Authorized Signatory for ECGC

ANNEXURE-J

PRICE /COMMERCIAL BID

DRAWINGS, SPECIFICATIONS AND LIST OF MAKES

S. NO	DESCRIPTION		PAGE NO
1	PART-A	INTERIOR & FURNISHING WORKS	63-86
2	PART-B	ELECTRICAL & FIRE FIGHTING WORKS	87-137
3	PART-C	HVAC	138-201

BILL OF QUANTITIES

S. NO	DESCRIPTION OF ITEM	PAGE NO	AMOUNT (RS)
1	SCHEDULE (DSR) ITEMS	165-201	
2	NON-SCHEDULE (NON-DSR) ITEMS	202-263	
	TOTAL (EXCLUDING GST)		

SPECIFICATION-PART A

INTERIOR & FURNISHING WORK:

1.0 GENERAL DATA

The work under this tender shall be executed strictly in accordance with constructional and material requirements defined under these specifications. The contractor shall carefully acquaint himself with these specifications to determine his contractual obligations for work. Architect instruction shall be binding over and above specification described in BOQ, in writing only with CC to Owner.

1.1 DRAWINGS/DIMENSIONS PROCEDURE

Figured dimension on drawings shall supersede measurements by scale and drawings to a large scale take precedence over these to a smaller scale. Dimensions or directions in the specifications shall be checked on site. The dimensions where stated do not allow for wastage, laps, joints etc. The levels, measurements and other information concerning the existing site as shown on the drawings are responsibility of bidder shall verify them for himself and examine the nature of the ground, conduct procedure & coordinated from electrical, HVAC and fire BOQ items.

Procedure for coordination is, creating mockup sample and all trades work men shall install items, shall conduct operational coordination, physical execution satisfaction in accordance to drawing, or modification suggested from feedback from team at work, shall be understood consented by all trade work men. Drawings shall be kept permanently displayed at site, with necessary pictures. Marking leveling and dimensions permanently marked at site. Owner and Architect representative have discretion to observe witness coordinated team work for up to mark work progress, take note and pictures for record.

1.2 CO-ORDINATION OF DRAWINGS

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

Any discrepancy shall be bought to notice for timely rectifications for architect response if any, that may take up to 15 days. Communication shall be done in advance, no time extension is available to contractor in this response time and shall not be entertained as hindrance.

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

1.3 B.I.S. CODES OF PRACTICE

Wherever any reference is made in the specifications to any Bureau of Indian Standards (B.I.S.) or Indian Standards (I.S.) Code of practice, it shall be understood to indicate the latest version of the code of practice in usage all the time of construction. All civil and structural work shall carry out as per latest C.P.W.D. specification for material and workmanship unless specified otherwise.

1.4 SETTING OUT

The CONTRACTOR shall be responsible for the true and proper setting out of the work in relation to original points, lines, and levels of reference and for the correctness of the levels, dimensions, and alignment of all part of the work and for the provision of all necessary instruments, appliances and labor in connections therewith. If any time during the progress of the work any error appears or arises in the position of levels, dimensions, or alignment of any part of work the contractor on being required to make good shall at his own expenses rectify such errors to the satisfaction of the Architect. The checking of any line or level by the Architect shall not in any way relieve the contractor of his responsibilities.

The contractor shall provide all required setting out pillars and one or more permanent benchmarks in some place before the start of the work, from which all important center lines and levels for excavations will be set. The contractor shall provide all labor and material for setting out at his own cost.

The setting out pillars & permanent benchmarks shall consist of masonry pillars with top neatly plastered and horizontal as per the approval of Architect. Benchmarks shall be well connected with GTS, or any other benchmarks approved by Architect.

2.0 CIVIL WORKS:

i) All work shall be done strictly according to the items described in the schedule of quantities & rates and as per latest applicable CPWD specifications or latest BIS Codes. In the event of any item not finding a place in C.P.W.D. specification or in BIS codes, the matter will be referred to the Architect for decision. The decision of Architect shall be final regarding the specifications to be adopted. All Standards, codes, Technical Specifications, Codes of Practice referred to shall be of the latest editions including all applicable official amendments and revisions whether such reference has been made or not.

ii) Testing of materials / works shall be carried out as per latest CPWD specification / BIS codes from approved test laboratory. The contractor shall carry out all such tests at his own cost & time. The nos. of samples to be submitted for testing and the frequency of testing shall be as specified in the specifications / standards or codes.

iii) All the works shall be carried out in accordance with drawings, specifications, description of item in schedule of quantities or as per the direction of ARCHITECT to his full satisfaction. If the substitution of any approved / specified material and make, due to its non – availability, with an alternative one, becomes necessary, the agency must get specific approval of the same before placing order for purchase of materials.

iv) Providing and operating necessary measuring and testing devices and materials are included in the Contractor's scope of work. The quoted price shall be inclusive of the cost of all such tests, which are required to ensure achievement of specified quality. No separate payment for testing shall be made.

v) All finished work must be truly vertical & horizontal or in any other plane as specified. The rates quoted by the agency must include the cost for taking necessary measures to achieve it.

vi) Any scaffolding used shall be of double vertical supports and no portion of scaffolding shall touch the wall surface.

vii) The workmanship is to be the best available and of a high standard. Use must be made of special trades men in all aspects of the work and allowance must be made in the rates for so doing. Contractor shall maintain uniform quality and consistency in workmanship throughout.

viii) Any work not conforming to specifications or workmanship shall be rejected and the same shall be rectified or removed and replaced with work of the required standard of workmanship at no extra cost to the employer.

ix) Rates quoted for the items shall be valid for carrying out the item of work at any and / or all floor heights

3.0 P.O.P. (PLASTER OF PARIS)

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

3.1 PREPARATION OF SURFACE

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

3.2 PLASTER OF PARIS

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

3.3 APPLICATION

The material will be mixed with water to a workable consistency. Plaster of Paris shall be applied directly on the wall plasters in suitable sizes panels and finished to a smooth surface by steel trowels. The plaster shall be applied in such a manner that it

fully fills the gaps the thickness over the plastered surface is as specified in the description of the item.

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

4.0 VITRIFIED /GLAZED/CERAMIC TILE AT FLOOR/ DADO

The samples of tiles/ slabs to be submitted to the Architect for approval. Final decision will be based on the decision of the Architect /engineer or authorized official. For floor tiles, all edges to be sorted for straight edges before laying. Tiles will be laid after approval from the Architect. Joints for all flooring to run in a straight line and should not exceed 1.5mm for stones and 1mm for tiles and should be filled with matching cement slurry of approved shade to the full depth. Rate shall include soaking the tiles in water for at least two hours before laying. Curing, cleaning the surface.

For wall tiles: The tiles shall be uniform size and color. The rear face of the tiles shall be grooved and/or recessed to provide an adequate key for the plaster. The tiles shall be laid true and plumb over a cement screed 15mm thick composed of 1 part cement and 3 parts coarse sand. Before laying the tiles, the plaster shall be allowed to harden and then roughened with wire brushes. The back of the tiles shall be buttered with a coat of matching cement slurry and set in the bedding mortar. The tiles shall be firmly set in the mortar bedding and tamped and corrected to proper plane and lines. The joints shall be tight, regular, uniform and shall be as fine as possible and finished neat in pigmented horizontal to form required pattern.

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

5.0 WALL FINISHES

5.1 EXTENT AND INTENT

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

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

5.2 GENERAL

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

5.3 PLASTER WORK

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

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

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

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

5.4 CHASING

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

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

5.5 SAMPLES

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

5.6 PREPARATION OF SURFACE

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

5.7 INTERNAL PLASTER TO WALLS

Plaster to internal faces of walls shall be 12mm/15mm/20mm thick as called for, consisting of 1 part cement and 4-part clean sand. (Fine and Coarse sand in equal proportions). As approved by the Architect

5.8 MORTAR MIXING

Mortar shall be prepared as specified under brick work. It shall be made in small quantities only as required and applied within 15 minutes of mixing.

5.9 APPLICATION

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

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

5.10 CHICKEN MESH ON WALLS

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

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

5.11 CURING

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

5.12 CEILING PLASTER

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

5.13 PREPARATION OF SURFACE

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

5.14 APPLICATION

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

5.15 GROOVES

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

6.0 UPVC/ ALUMINUM WORK

6.1 SHOP DRAWINGS

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

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

Metal thickness

Arrangement of components

Jointing

Details of site connections

Fastening

Flashing

Metal finishes

Glazing

Weather stripping

Sub framing

Hardware (including preparation)

Sealant

Other pertinent information.

6.2 INSPECTION:

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

6.3 ALUMINUM SECTIONS:

Aluminum sections used for work shall be as per Architects approved drawings and suitable for use to meet architectural on technical, structural, functional, and visual considerations. The aluminum extruded section shall be confirmed to IS designation HE 9WP/HV 9WP alloy, with chemical composition and technical properties as per IS 733 and IS 1285.

6.4 FABRICATION:

All frames shall be square and flat, and the frames being fabricated to a true right angle, and shall confirm to IS 1948. These shall be fabricated as per approved shop drawing. Both fixed and operable frames shall be fabricated out of a section which has been machine cut to length and mechanically jointed with hardened nickel, zinc plate steel screws and joining accessories such as cleat, fixture, machine bolt made of such material as not to cause bimetallic action. For matching with colored anodized aluminum section all visible screws shall be colored black by chemical process. Threads of machine screws used shall confirm to requirements of IS 4218. It shall withstand 150 Kg/sqm wind pressure without deformation. Required sash bars as per approved drawing shall have watertight EPDM gasket to that water does not penetrate

through it even through water penetrates exterior gasket and are properly welded/braced/screwed to the main members.

6.5 ANODIZING:

All aluminum section shall be anodized as per IS 7088 and electro-colored to matt bronze finish as per IS 1868 grading as specified in item schedule. Anodizing to confirm specified grade with minimum average thickness of 25 microns meter when measured as per IS 6012. The anodized coating shall be properly sealed by steam or in boiling water cold sealing process as per IS 1868/IS 6057. Polyethylene tape protection shall be applied on the anodized section before they are brought to site. All care shall be taken to ensure surface protection during transportation, storage at site and installation. The tape protection shall be removed on installation.

6.6 GLAZING:

Glazing shall comprise of reflecting bronze or approved shade tinted or heat reflective float glass 6mm thick on outside and 12 mm thick toughened float glass on inside, all glass panels shall be retained within aluminum framing by used of exterior grade Ethyl Propylene Di Methylene (EPDM) gasket. No water leakage or penetration shall occur when subjected to continuous steady water shower as per BS 4315 and DIN 18055 withstanding water spray at the rate of 5 gallon per hour sft. of fixed glass area and static pressure of 20% design wind load or 15 PSI whichever is greater. The complete installation shall be free from vibration, wind whistle and noise due to thermal and structural movement and wind pressure. For doors glazing shall be of 12mm thick float glass clear/tinted as specified.

6.7 PRECAUTIONS:

Contractor shall ensure that aluminum curtain walls are not deformed/damaged during subsequent construction. all fittings, hinges and framework etc. shall be protected within alkathene sheets, so that these may not be damaged during execution of work.

6.8 FITTINGS:

The contractor shall fix aluminum doors, windows etc. in prepared opening. Aluminum door frames, wherever possible, shall be fixed in place before erecting partitions. Where this is not possible, prepared opening shall be left for hold fasts. Breaking of

partitions or walls for inserting hold fasts will not be permitted. Where the frames are to be fixed to column/wall faces they shall be fixed with rawl bolts/expansions bolts of approved make in approved manner. Special concrete blocks with cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 stone aggregate 10 mm size) with 3mm thick M.S. plate 100 x 100mm shall be cast set at suitable places into the jambs of openings. Door and windows frames shall be welded to the blocks with spaces in approved manner.

The contractor shall be responsible for assembling composites, bedding, and pointing with mastic inside and outside at the mullions and transoms, fixing lugs to the frames, placing the doors/windows in their respective opening and bedding with mastic. The contractor shall be responsible for all builder's work including cutting out and making good, forming fixing holes for inserting loose lugs, bolts and clips and for stacking of window, doors adjacent to the opening for necessary hoisting. The contractor shall be responsible for the doors and windows being set straight, plumb and level and for their satisfactory operation after the fixing is complete.

6.9 MANUFACTURER'S ATTENDANCE

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

7.0 PLYWOOD

Plywood to be used shall be grade BWP, i.e., it shall have bounded with Commercial IS-710 type synthetic resin adhesive shall be equal or superior quality that is laid down in IS 710.

8.0 FLUSH DOORS

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

8.1 ADHESIVES

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

8.2 NAILS, SPIKES, SCREWS & BOLTS

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

8.3 WORKMANSHIP

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

9.0 PARTITIONS, CABINET WORK & INTERIOR GLASS FILM

General: The various members shall be worked in the best manner known to the trade, mortised and tenoned, doweled, blocked, and glued together to avoid the use of nails as far as possible. The details shall be closely followed, molding clearly cut and miters accurately made. Free edge of shutters, Shelves, partitions, sides etc. shall be provided with first class teakwood edging pvc edge tape as mentioned in individual item , glued and nailed in approved manner. Shelves, where shown fixed, shall be supported on aluminum or other cleats or in other manner as approved by the Architect. Adjustable shelves shall brass sockets and pins as detailed on drawings. Drawer bottoms shall be of 6 mm commercial ply, unless otherwise mentioned. Drawer front, sides and back shall be as mentioned in item. The drawers shall slide on Soft closer telescopic channel as shown in drawing.

Cutouts, opening, etc. shall be provided in the counters and cabinets to accommodate sinks, wash basins, cooking, ranges, pipes, etc. as shown on drawings as required at

site. Quoted rate shall include labour/materials required to fix the sub-frame to the wall with MS flats (‘L’/ ‘U’) shape clamp with adequate screws and repairing the portion damaged while putting the gutties. etc. and making good the same. Quoted rate shall be inclusive of making provisions for electrical conduits and switch boxes and time required while coordinating with other Contractors for the final finishing of the work. All electrical works shall be got carried out through licensed “A” class Electrical Contractor having experience of similar work and duly approved by Architects/ ECGC Ltd . The work shall be executed as per specifications and strictly in keeping with relevant IS code and rules and regulations of authorities. All work/materials will be as per good engineering practice. Wherever glass is mentioned it will be clear float glass.

9.1 DRY WALL PARTITION

122.0mm thick Hydro+ partition, Metal framework partition having maximum reachable height of 5070mm satisfying L/240 criterion at 200Pa, possessing fire rating of 120mins, tested in accordance to BS-476 Part 20 & 22 & sound insulation (Rw) of 52*dB, tested in accordance to ISO 10140-2/ASTM E90 & spectrum adaption term as per ISO 717-1, having U-value of 0.39W/m²K & Severe duty rating as per BS 5234 part 2. Partition comprises of double layer, tapered edge Gypsum Board, certified Green Pro by CII & strategic location of manufacturing plants results in lower carbon emissions. Partition includes double layer of 12.5mm thick mold resistant with Glass mat reinforcement & inorganic coating on surface, conforming to EN 15283-1 Type GM - FH1, having flexural strength – {Longitudinal > 540N & transverse > 210N} on either side of the framing. Metal frame work, designed in compliance with BS EN 14195 & manufactured using CR1 Grade Steel as per IS 513, having yield stress of 300MPa & tensile strength of 340MPa with surface finish of AZ150 as per IS 15961/AS 1397 & tested for 500hrs of salt spray test as per ASTM B117, includes 70x34x34x0.6mm, Closed Stud with 1mm slit, having moment of inertia 82259 mm 4 about major axis, positioned at 407mm c/c in 72x32x32x0.5mm. Floor Channel & 72x32x32x0.5mm. Ceiling Channel with flanges bend at 5° acute angle. Floor & Ceiling Channel is anchored with Rawl plug Ø8x45mm having Pull Out strength of 6.8KN or Nail**, fixed at 600mm c/c in zig zag manner. Closed Stud with GI-L Angle 30x45x30x1mm to be placed between the studs, behind the horizontal board joint. Inner & Outer layer of Boards to be Screw fixed with Drywall Screw of 25mm with

16nos per m2 & 35mm with 32nos per m2 at spacing of 600mm & 300mm respectively. 50mm Glass wool of density 20kg/m3 shall be placed in Metal framework with the help of holding Clip. Edges & joints to be finished with Easi-Fill Hydro JC conforming to ASTM C475 & water absorption <5% as per EN 520 & Joint Fibre tape on outer board and inner board. Periphery & cut-outs of the partition to be treated with suitable Fire & Acoustic Sealant. All the performance test are carried out at NABL accredited/ government approved lab.

9.2 MODULAR PARTITIONS , DOOR & INTERIOR GLASS FILM

9.2.1 DOUBLE GLAZED FIXED PARTITON

Slim Line Modular Aluminium Fixed partitioning frame of 100 mm x 25 mm which can accommodate 2 panels of glass of 10 mm thickness separated by 40-50 mm distance for better sound insulation and acoustic properties. The rate to include Design, Fabrication, Supply, and Installation & Handover of slim line fixed partition system. The fixed partition system should accommodate open able door on Hinges. Door to be paid separately. The system of fixed partition with open able door to be custom designed to withstand the design confirming to IS -875 part III. The system shall have two barrier gasket system to hold glasses.

Microwave cured EPDM gaskets to accommodate glass thickness as per structural requirement, weather sealants, and SS 310 grade screws of approved make, all in complete required to perform as per specification and drawing in conjunction with BOQ. The extruded aluminium sections of Alloy 6063 T5 / T6 & tolerances confirming to DIN / EN standard, of approved architectural sizes, from approved extruder. The structural profiles shall have minimum 1 to 1.6mm wall thickness. All the internal visible surfaces shall have high Durability) / Super durable Powder coating of 60 - 80 micron confirming to ASTM E 283, ASTM E 331, ASTM E 330AAMA 2604 or anodizing shade as approved by Engineer with minimum 25 micron. The non-visible aluminium surfaces shall have minimum chromating treatment.

Material shall be as per make list in tender document.

All shade approval shall be as per Architect's.

The system shall demonstrate performance for air seal / water seal / structural

requirement. The system performance test shall be mandatory. The performance test shall be carried out at an accredited laboratory having fully atomized data acquisition system with provision to capture all values in the test results sheet.

The sequence of test and standard shall be ASTM E 283, ASTM E 331, ASTM E 330, and AAMA 501.1. The quoted rate shall include all design, engineering & shop drawing approval. Glass: 2 NO.10 mm clear toughened Glass or as specified in BOQ. Tolerance of 5 mm allowed in both dimension of the cross section of the slim line partition as per manufacturer's specification.

9.2.2 SINGLE GLAZED FIXED PARTITON

Slim Line Modular Aluminium single glazed partition frame of 45 mm x 25 mm with in bottom and top channel with acoustic gasket as per specification.

The rate to include Design, Fabrication, Supply, Installation & Handover of Fixed partition frame. The fixed partition should accommodate 10mm heat strengthened glass. The fixed partition to be custom designed to with stand the design confirming to IS -875 part III. The system shall have barrier gasket system to hold the glass. Microwave cured EPDM gaskets to accommodate glass thickness as per structural requirement, weather sealants, and SS 310 grade screws of approved make, all in complete required to perform as per specification and drawing in conjunction with BOQ. The extruded aluminium sections of Alloy 6063 T5 / T6 & tolerances confirming to DIN / EN standard, of approved architectural sizes, from approved extruder. The structural profiles shall have minimum 1 to 1.6mm wall thickness. All the internal visible surfaces shall have high Durability / Super durable, Powder coating of 60 - 80 micron confirming to AAMA 2604 or anodizing shade as approved by Architect with minimum 25 micron The non-visible aluminium surfaces shall have minimum chromating treatment.

Material shall be as per make list in tender document.

All shade approval shall be as per Architect's/ Engineer Approval.

The system shall demonstrate performance for air seal / water seal / structural requirement. The system performance test shall be mandatory to verify performance test shall be carried out at an accredited laboratory having fully atomized data acquisition system with provision to capture all values in the test results sheet.

The sequence of test and standard shall be ASTM E 283, ASTM E 331, ASTM E 330, and AAMA 501.1.

The quoted rate shall include all design, engineering as per drawing /approval.

Glass: 10 mm clear Heat strengthened/ Toughened or as specified in BOQ.

Tolerance of 5 mm allowed in both dimension of the cross section of the slim line partition as per manufacturer's specification.

9.2.3 MODULAR HINGED DOOR

Door shutter for Modular Slim line Aluminium partitioning frame should be of 45mm x 25 mm using outer frame of 60 mm x 35 mm vertical 2 top frame and 50mm x 25mm as outer frame. Hinge-able door width 0.90mt - 1.8 mt as per drawing. Glass beads at horizontal top and bottom should accommodate glass 10 mm thick acoustic glass of combination. Microwave cured EPDM gaskets to the glass as per requirement. Door to function on hinges. Double D handle - 450mm x 25mm, Dead Lock -30mm Backset -60 mm cylinder, Drop down seal, Door stopper.

Tolerance of 5 mm allowed in both dimension of the cross section of the slim line partition as per manufacturer's specification.

9.3. INTERIOR GLASS FILM

Designing, Providing, Fixing/ Installation of highly durable decorative translucent vinyl film for interior glass finish. It should come with pressure sensitive, acrylic and permanent adhesive. The dusted crystal film should have thickness of approx. 3.2 mils (81 microns) and frosted crystal film should have thickness of approx. 4.7 mils (120 microns). The liner of the film should be Silicone-coated polyester with thickness of approx. 3.6 mils (90 microns). The film should have adhesion strength of 18N/25mm on glass / polycarbonate / acrylics after 24 hours of application. The tensile strength of dusted crystal film should be 23N/25mm at 23°C and for frosted film tensile strength should be 15N / 25mm at 23°C. When used in interior applications on glass, products should have Class A rating as per ASTM E84 (as defined by NFPA 101 "Life Safety Code"). Dusted and frosted crystal glass finishes should give the uniform appearance with a dusted or frosted sparkle effect and suitable for interior and exterior glass surfaces. The

crystal glass finishes should be used only on glass, acrylic, polycarbonate surfaces. This film can be plotter cut in as per customized design. The film should have warranty of 15 years for non-perimeter glass and 5 years for perimeter glass (no warranty will be applicable on printed product).

10.0. WOOD WORK AND JOINERY:

10.1. LAMINATE:

Laminates where specified shall be of approved brand type, texture and thickness and manufacturer 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 laminated shall be 1.5 mm thick of approved make.

10.2. JOINERY:

All details shall conform to the drawings, but all measurements shall be checked at site. The scantlings shall be accurately planned and finished smooth to hold full dimensions shown in the drawings after finishing and rebates, rounding and mouldings made before they are framed. No patching or plugging of any kind shall be prepared and got approved by the Architect before proceeding with bulk manufacture.

10.3. IRONMONGERY:

This section shall cover all finish hardware, latches, locks and other fittings and fixtures etc., used in wood doors. All finish hardware shall be well made, reasonably smooth, and free 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 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 manufacturer's printed instructions and to the satisfaction of the Architect.

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

11. VERTICAL BLINDS:

Vertical blinds shall be as per BOQ.

The installation shall be done by expert workmen approved by the suppliers, strictly as per manufacturer's printed instructions. The installed blinds shall stay flat and in plum in one line and shall operate smoothly to the approval of the Architect/ ECGC Ltd.

12.1 PRESERVATIVE TREATMENT

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

12.2 PAINTING AND POLISHING

As specified in BOQ/drawings and approved by Architect. Polish shall be melamine of approved finished by Architect.

12.3 PROTECTION OF WORK

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

13.HARDWARE

13.1 EXTENT AND INTENT

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

13.2 GENERAL

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

13.3 SAMPLES

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

13.4 QUALITY

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

13.5 GUARANTEE

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

14. PAINTING

14.1 EXTENT AND INTENT

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

14.2 MATERIALS

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

only in accordance with directions. Remove rejected materials immediately from the premises.

14.3 COLOR

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

14.4 COMMENCEMENT OF WORK

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

Painting work shall be taken in hand only after all other contractor's work is completed. Building where painting work is to be commenced shall be thoroughly swept and cleaned up before commencement of painting. Other materials of colors sharp and clean, without overlapping.

14.5 ENAMEL PAINT

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

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

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

14.6 PLASTIC EMULSION PAINT

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

14.7 FIRE RESISTANT COATINGS ON WOODWORK

14.7.1 General:

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

14.7.2 Application:

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

Finishing coat: Primer coated wood is to be applied with 2 coats of sealant coating equivalent to Viper FR-944 (fear) or Viper FRS-881 with brush with a time interval of 4-6 hours.

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

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

14.7.3 SPECIAL NOTES

1. All laminate shall be 1.5mm thick. On vertical surfaces & 1.5mm thick. On horizontal surfaces unless otherwise specified.
2. All hardware like multipurpose locks, hinges, handles, magnetic catches etc. shall be used only after written approval of samples.
3. Each cabinet shall be SS handle, lock/spring loaded hinges brass ball catches and shutter to be fixed using hinges of approval quality.

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

14.7.4 SPECIFICATIONS/BRAND NAMES

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

15. POP AND FALSE CEILING ITEMS

15.1 Plain Gypsum board False Ceiling

False ceilings make the ceiling level look clean and defined. They are economical and improve the look of the room / area and cover up all the exposed and unpleasant looking wires, cables and pipes while providing support to lighting arrangement. They absorb sounds and generally have fire- resisting properties.

Being lightweight they are easy & quick to install, have light reflectance, sound absorption, thermal insulation properties.

15.2 Location:

Refer reflected ceiling plan provided by the architect.

15.3 Material:

12.5 mm thick. Gypsum plaster boards, galvanized iron framing, cleats and steel expansion fasteners, jointing tape.

15.4 GENERAL NOTES FOR FALSE CEILING WORK:

The false ceiling design can be stepped / curved / interior design etc. however only plane / horizontal surface shall be measured for the purpose of payment. The same shall include gypsum verticals, coves etc. to be provided as per design.

Ceiling shall be hung from the existing slab through hanger's / channels. Rate quoted in the tender shall be applicable for all floor levels/ all floor height including scaffolding, etc complete. The rate of false ceiling items also includes 6 mm ply backing for supporting light fixtures in the false ceiling and shall not be charged separately.

All GI steel to be marked with "GYPSTEEL" which is a standard hologram of India gypsum.

All Board to be marked with "GYPSTEEL" which is a standard hologram of India gypsum.

15.5 Gypsum False Ceiling:

Plain gypsum board MR/FR grade ceiling shall be as per BOQ. False ceiling Suspension (considering all levels with require all fabrication work and fitting from RCC slab to false ceiling level & The rate shall be considered in sqm for all floors and at all heights, offsets whether cove light or fixed gypsum board size up to 1000 mm to 1200 mm in the false ceilings including all costs) . Work complete as per the manufacturer's specification of approved make- M/F Suspended Ceiling 1 hour fire

rated.

Cutouts For light fittings, grill diffusers shall be made. Necessary cutting / providing openings in the ceiling for AC fixtures, grills, electrical fittings, or other utility services, hatch openings etc. shall be provided by the Contractor and cost of making such modifications shall be included in the price. No separate charges for cutting / providing opening will be paid. Joints between the two-gypsum board, (Board placed staggered) gypsum board and wall will have suitable tape and finishes with plaster of Paris so as to have crack free joints.

The item includes providing and fixing trap door of as per approved sample of Ceiling panels comprise of a powder-coated beaded steel frame with gypsum / plywood board door. Each panel features a push-latch closing mechanism with door retaining safety cable & hook. Suspenders from ceiling to support the frame and trap door firmly along with necessary hilti fastner, cleats, screws, angles, packing, etc. complete work. Work complete including all type of tools, tackles, finishing etc. complete as per approved sample & instruction of Architect/ Client/ PMC. Sample mock shall be approved from Architect/ Client.

15.6 Mineral Fiber Ceiling

Mineral fiber ceilings shall be as per BOQ. All aluminium sections shall be anodized/powder coated) including all labour, material, lifts etc. complete.

16. LIST OF APPROVED MAKE:

SR. No	Item	Approved Make
1.	Ordinary Portland Cement	Ambuja, Ultratech, Jaypee, ACC, Mycem, Wonder
2.	White Cement	Birla, J.K, Grasim
3.	TMT Fe -500/415	Tata, Sail, JSW, Jindal Steel, Fortune, Kamdhenu, Moyra
4.	Structural Rolled Steel Sections	Tata, Sail, Apollo
5.	Cement Bonded Particle Board	Ncl (Bison Board), Everest (Eternite) Shera
6.	Float Glass / Mirror	Modi Guard, Saint Gobain, Asahi

7.	Ceramic Tiles	Qutone, Somany, Kajaria, Nitco, Johnson, Orient, Cera, RAK
8.	Vitrified Tiles	Qutone, Somany, Kajaria, Nitco, Johnson, Orient, Cera, RAK
9.	Construction Chemicals	M.C. Bauchemie,Fosroc, Sika,Cico, Pidilite, Sika, Krishnacon chemical, Ashford, Bal, Basf., Kerakol, ultratech
10.	Paint, Primer	Asian, Berger, Nerolac, Indigo, ICI, Dulux
11.	Putty	Birla , Berger, Asian
12.	Adhesives	Fevicol, Kitcol, Araldite.
13.	Anchor Fastener / Bolts	Hilti. Fischer
14.	Aluminum Sections	Jindal, Hindalco , Gujarat Extrusion, Banco
15.	Water Proofing	BASF,Fosroc , Sika , Pidilite, ultratech
16.	Tile Chemical	BASF, Fosroc , Sika , Pidilite, ultratech
17.	WPC Door	Alstone , Flexibond
18.	Fiber Cement Sheet Board	Ecopro, Everest , Shera , CK Birla Group
19.	SWR PVC Pipe & Fittings Eco. Drain Pipe & Fittings	Finolex ,Supreme,Prince, Supreme, Astral
20.	ASTM/CPVC Pipe & Fittings For Water Supply	Astral,Supreme,Ashirwad
21.	Sanitary Fixtures	Jaquar, Hindware , Parryware , Cera, Kohlar, Grohe, MARC, Essco by jaguar.
22.	SWR PVC Pipe & Fittings Eco. Drain Pipe & Fittings	Finolex ,Supreme,Prince, Supreme, Astral, Ashirwad.
23.	Hardware & Fittings	Dorma , Geze ,Hafele, Kitch, Godrej, Ebco, Hettich.
24.	Glass	Saint Gobain, Modi Guard , Asahi
25.	Flush Door	Greenply, Centuryply, Europly, Nippon
26.	Ply (BWP - IS 710 & BWR Is 303)	Greenply, Centuryply, Europly, Nippon
27.	Laminate	Greenlam, Centuryply, Europly, Royal Touch , Formica, Nippon
28.	Paint	Jotun, Asian, Berger, Nerolac , Indigo, ICI, Dulux
29.	Dry Wall Partition	Gyproc, Anutone, Everest.
30.	Modular Furniture	Featherlite, NLF, Godrej, HNI, Steelcase, Herman Miller.
31.	Chair	Featherlite, Godrej, Nilkamal, HNI, Steelcase, Herman Miller
32.	Roller Blinds	Hunter Douglas ,AMI, AD Blinds, Marvel, Vista
33.	Fabric	Verosol, De Decora, Opera, SJ, Montero
34.	Glass Film	3M Dinoc Film, Avery, Garvey

35.	Drive Type Mobile Compactor	NLF, Space Planners
36.	Hardware & Fittings	Gezze ,Dorma,Hefele,Kitch ,Ozone
37.	False Ceiling	Anutone, ,USG Boral,Saint Gobain , Armstrong
38.	Metal Ceiling	Hunter Douglas , Supersil , Saint Gobain
39.	Acoustic Board	Ecotone , Anutone , Aerolite
40.	Signage	Cosign, LM Technologies, Rainbow Sign.
41.	Dustbin	Mr.Bin, Jay Ambe Engineers, Pratham Industries.
42.	White Board & Soft Board	Mohanty Boards, Elite Sales, Visual Edge.
43.	Planters	Hortica, Ira Agrotech, Sourabh Sales Corporation
44.	MDF	Nuwood, Maftalal, Duratuff
45.	Kitchen Hardware & Fittings	Haffele, Godrej Interio, Johnsons Kitchens.
46.	Adhesives	Pidilite, Roff, Shalimar
47.	Fabric Protection	Fab Guard (Dove Corporation), Scotch Guard (Birla 3m Ltd.)
48.	Modular glazed partitions/doors	Kubik , Zilio, Bharat Glass Systems

(PART-B) ELECTRICAL:

SPECIFICATION & BILL OF QUANTITY:

SCOPE OF WORK:

Prior to laying of conduits, the Contractor shall prepare shop drawing, with detailing and coordinated from other tradesmen engaged at site example carpenters for Interior furnishing, HVAC design drawing, for placement and spacing of site physical installations/ items. Conduit/cable tray layout indicating the route of conduit, number and size of conduits, location of junction/ inspection/pull boxes, size and location of switch boxes, point outlet boxes and other details. Location of points/ power supply to the gadgets, equipment's that require power and electrical supply. Drawing shall be explained and understood by every trade man working site, through demonstration, and actual gadget tested by placing to actual position.

Drawing shall be submitted for records, and confirmation about mutual placement of items. All layout drawings shall be presented to team, joint meeting for understanding of items for installation, to the satisfaction of all personal working at site. Layouts shall be placed for comments, to the Consultant. Any modification or suggestions recommended and commented by the Consultant shall be incorporated in the work.

Drawing shall be displayed on site at convenient location for every one on large size, such that min font size on the drawing is 3 mm.

1.0 CONDUITS:

1.1a- FRLS PVC CONDUIT

Conduits shall be heavy gauge rigid PVC of minimum thickness of 2mm. Conduits shall be ISI marked confirming to IS: 9537 (Part-3)-1983. All conduit and conduit accessories shall be of PVC. Conduits shall be joined together by vinyl type cement / solvents. Minimum size of conduit shall be 25mm dia. Conduit shall be fixed on ceiling or wall. Exposed visible conduits shall be concealed in wall, ceiling etc. or hidden inside cabinets, or inside ceiling conduits shall be fixed on surface of wall with clamps at regular interval as

called for elsewhere. For termination of PVC conduits into switch outlet boxes, PVC female adopters shall be used. Wherever conduit run exceeds 10-meter, circular junction boxes shall be provided to facilitate pulling & inspection of wires. Inspection boxes shall be located to have access and replacement or wires in future, in co-ordination with other installation, to the satisfaction of the Consultant Engineer-in-charge. Conduits shall be bend using suitable size springs. Long radius bends shall be provided. Heating shall not be used to bend the conduits. Size of conduit shall depend upon number and size of wires to be drawn.

1- M.S. conduits:

1.1 MATERIAL

Conduits shall be black enameled mild steel (ISI marked) and be solid drawn or lap welded conduits, stove enameled inside and outside with minimum wall thickness of 1.6 mm for conduits up to 25 mm diameter and 2 mm wall thickness for conduits above 25 mm diameter. The accessories used for M.S. conduits shall conform to Indian Standards IS : 3837-1966-(Specification for fittings for Rigid steel conduits with the latest amendments ,The conduits shall be delivered to the site in original bundles and each length of conduit shall bear the label of the manufacturer. The number of insulated copper conductor wires that may be drawn in the conduits of various sizes are given below and the conduit fill shall not exceed 40%. The minimum size of conduits shall be 25mm diameter for lighting and outlets and conduit size shall be increased as per relevant IS code depending on the number of wires. Wires shall be PVC insulated copper conductor and ISI marked.

1.2 CONDUIT FILL

The maximum number of 650/1100 Volts grade single core PVC insulated copper conductor wires that may be drawn in the conduits of various sizes are given below.

1.3 Maximum number of wires use under (M.s.) conduit:

CONDUITS (MM)	**20**	**25**	**32**	**40**	**50**

Size of wire in sq. mm	(Maximum number of wires use under conduit				
1.5	5	6	18	-	
2.5	3	4	10		
4	2	4	5	10	
6	-	6	6	8	
10			3	4	
16				3	5
25				2	3
35				1	1

1.4 M.S. CONDUIT CONNECTIONS:

Conduit connections for MS conduits shall be screwed metal to metal and be painted with one coat of self-etching zinc chromate primer and two coats of enamel paint. The threads and sockets shall be free from grease and oil. Connections between screwed conduit and sheet metal boxes shall be by means of a brass hexagon smooth bore bush, fixed inside the box. Check nuts to be provided on inside and outside of box and connected through a coupler to the conduit or as directed by the Consultant. The joints in the conduits shall be free of burrs to avoid damage to insulation of conductors while pulling them through the conduits. Connections between PVC and MS conduits shall be through a junction box. Direct connection between PVC and MS conduits is not allowed.

1.5 BENDS IN CONDUITS:

Where necessary, bends may be carried out by means of conduit bends and/or circular inspection boxes with adequate and suitable inlet and outlet screwed joints. In case of recessed system, each junction box shall be provided with a cover properly secured and flushed with the finished wall/ceiling surface, so that the conductors inside the conduit are accessible. No bends shall have radius less than 2.5 times the outside diameter of the conduit. Use Special spring for bending the conduit. Heating to soften the conduit for bending is not

allowed.

1.6 FIXING OF CONDUITS

Conduits and junction boxes shall be kept in position with the help of proper hold fasts while the walls, slabs and floor are under construction. Fixing of standard bends or elbows shall be avoided as far as practicable and all curves maintained by bending the conduit pipe itself with a ling radius which will permit easy drawing of conductors. All threaded joints of conduit pipes shall be treated with approved preservative compound to secure protection against rust. Conduits shall be arranged so as to facilitate easy drawing of wires through them. Adequate no. of junction boxes shall be provided. All conduits shall be installed away from steam and hot water pipes. After the conduits, junction boxes, outlet boxes and switch boxes are installed in position, their openings shall be properly plugged or covered, so that, water, mortar, insects or any other foreign matter does not enter into the conduit system. Where called for, surface conduits shall be fixed by means of spacer bar saddles at intervals not more than 500 mm from both sides of fittings or accessories. The staples or saddles of galvanised mild steel flat, properly treated, shall be secured and fixed by means.

Separate conduits shall be provided for the following system.

i) Lights, Ceiling fans, Exhaust fans & 5A Light sockets.

ii) Power sockets & A/C outlets

iii) Telephone System

iv) Television, Computer & Music system

v) Emergency System.

vi) Public Address System

vii) Fire Alarm System.

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

i) Lights, Ceiling fans, Exhaust fans & 5A Light sockets.

ii) Power sockets & A/C outlets

iii) Telephone System

iv) Television, Computer & Music system

v) Emergency System.

vi) Public Address System

vii) Fire Alarm system.

Where exposed conduits are suspended from the structure they shall be clamped firmly and rigidly (min 10 kg load fastener to stable surface, not more than 600 apart) to hangers with design calculations. Hangers anchored to reinforced concrete appropriate inserts and necessary devices for their fixing shall be provided at the time of fixing. Making holes or openings in the concrete shall be repaired with concrete. Conduits shall be fixed in the chase by means of staples not more than 600 mm apart and the chase filled with cement mortar 1: 4. Cutting of horizontal chases in walls is prohibited. Chases shall be cut using electric cutter/blade.

1.4 PROTECTION

To minimize condensation or sweating inside the conduit pipes, all outlets of conduit system shall be adequately ventilated. All socketed connections shall be made fully water tight by use of proper jointing compound.

1.5 SWITCH-OUTLET BOXES AND JUNCTION BOXES

All boxes shall conform to Indian Standards IS: 5133(Part-1)-1969 (Specification for boxes for enclosure of Electrical accessories) with the latest amendments. All outlet boxes for switches, sockets & other receptacles shall be fabricated from 1.6mm thick

mild steel sheets duly painted with rust proof paint (zinc passivated) as called for, having smooth external & internal surfaces to true finish.

Junction boxes and outlet boxes in contact with earth or installed in areas exposed to the weather shall be of 2mm thick mild steel and painted. Where called for, outlet boxes for receiving switches, telephone outlets T.V. outlets, power plugs etc. shall be fabricated to prove shape and size to suit the cover plates of approved make for different utilities.

The cover plates shall be of, 2 mm thick, best quality Hylam sheets or ISI grade Urea Formaldehyde Thermosetting insulating material which shall be both mechanically strong and fire retardant. Proper supports shall be provided in the outlet boxes to fix the cover plates of switches as required. Separate screwed earth terminal shall be provided inside the box for earthing purpose.

All boxes shall have adequate number of knockout holes of required

diameter for conduit entry. Where called for outlet boxes for receiving switches and fan regulators in one box, shall be fabricated to approved shape and size to accommodate fan regulators and switches to be fixed on grid plates. These boxes shall be covered with Hylam sheets or ISI grade Urea Formaldehyde Thermosetting insulating material which shall be both mechanically strong and fire retardant.

All junction boxes, pull boxes and outlet boxes shall be provided with sheet cover Urea Formaldehyde Thermosetting insulating material. The box cover shall be secured to the box with adequate number of round head brass screws of approved make. Outlets exposed to the weather shall be fully weather tight, complete with rubber gasketed covers, glass where used shall be fully heat resistant for the duty.

The outlet boxes shall be painted with two coats of bit mastic paint before they are fixed in position. All Outlet boxes fixed in concrete/recessed in wall shall be of a minimum depth of 55mm.

1.6 INSPECTION BOXES

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

1.7 TELEPHONE SYSTEM

Conduits, junction boxes, draw boxes, outlet boxes and covers to boxes for telephone system shall be as described under relevant clauses elsewhere in these specifications. Conduits for telephone system shall be at least 300 mm away from the electrical conduits. The conduits for telephone wiring shall be of specified size and shall be terminated at outlets as indicated on the drawings. Telephone system conduits shall have 2 mm diameter galvanized steel pull wires installed. Necessary Junction boxes to be provided for easy

drawing of the Telephone wires from each unit to the Telephone Tag Box and from the Tag Box to the open ground.

1.8 T.V. & COMPUTER SYSTEM

Conduit's junction boxes, draw boxes, outlet boxes and covers to boxes for T.V. & Computer system shall be as described under relevant clauses elsewhere in these specifications. Conduits for T.V. & Computer system shall be at least 300mm away from the electrical conduits.

The conduits for T.V. & Computer wiring shall be of specified size and shall be terminated at outlets as indicated on the drawings. T.V. & Computer system conduits shall have 2mm diameter galvanized steel pull wires installed. Necessary Junction boxes to be provided for easy drawing of the Television & Computer wires from each unit to the Junction Box and from the Junction Box to the open ground.

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

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

ii. Number and size of wires in each conduit.

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

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

v. Schematic diagrams for the complete Electrical System.

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

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

1.9 CONDUCTORS

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

distribution and shall conform to IS : 694 -1964 with the latest amendments and shall be ISI marked.

1.10 BUNCHING OF WIRES

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

1.11 DRAWING OF CONDUCTORS

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

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

PVC insulated copper conductor wire ends before connection shall be properly soldered (at least 15mm length) with special Cu solder for copper conductor or shall be properly crimped with copper lugs/sockets as the case may be. Strands of wires shall not be out for connecting to the terminals. All strands of wires shall be soldered at the end before connection. The connecting brass-screws shall have flat ends. All looped joints shall be soldered and connected through terminal block/connectors.

The pressure applied to tighten terminal screws shall be just adequate, neither too much nor too less. Conductors having nominal cross sectional area exceeding 6 Sq mm shall always be provided with cable sockets. At all bolted terminals, brass flat washer of large area and approved steel spring washers shall be used. Brass nuts and bolts shall be used for all connections. Only certified wiremen and cable jointers shall be employed to do jointing work. All wire shall bear the manufacturer's label and the voltage grade at one-meter intervals for the full length of coil, and shall be brought to site in new and original packages.

The sub-circuit wiring for points shall be carried out in looping system and no joint shall be allowed in the length of the conductors. No wire shall be

drawn into any conduit, until all work of any nature, that may cause injury to wire is completed. Care shall be taken in pulling the wires so that no damage occurs to the insulation of the wire. Before the wires are drawn into the conduits the conduits shall be thoroughly cleared of moisture, dust, and dirt or any other obstruction by Drawing dry cloth through the conduits. The minimum size of PVC insulated stranded copper conductor wire for all sub circuit wiring for lights, exhaust fans, ceiling fan and 5A Light sockets points shall be 1.5 Sq mm. In case of power circuit not more than two 15 Amp power outlets shall be grouped in one circuit, wiring for the first power outlet shall be carried out with PVC insulated minimum 6.0 sq mm copper conductor wires.

Wiring for the second power outlet shall be carried with PVC insulated minimum 4.0 sq mm copper conductor wires. All power outlets shall be connected with minimum 4.0 sq mm PVC insulated copper conductor wires to the earth terminal of outlet. Separate circuit shall run with PVC insulated 4.0 sq mm copper conductor wires for water heaters, kitchen equipment, window Air conditioners and similar outlets at locations as shown on drawings.

The minimum size of wire from final distribution board to first tapping point in the circuit shall be 2.5 Sq mm. PVC insulated stranded copper conductor wires. Circuit shall not have more than a total of 8 points of fans, or 5A Light sockets and Light points and its load shall not exceed 800 watts. Not more than two power circuits shall be drawn through the same conduit.

Separate earth wire shall run for each circuit. In case two circuits of the same phase are running in the same conduit then a common earth wire is permissible. The size of earth wire for all the light points, ceiling fans, exhaust fans, light sockets, outlet boxes etc. shall be minimum 1.5 sq mm PVC insulated copper conductor wires.

1.12 JOINTS

All joints shall be made at main switches, distribution boards, socket outlets, lighting outlets and switch boxes only. No joints shall be made inside conduits and junction boxes. Conductors shall be continuous from outlet to outlet.

1.13 MAINS AND SUB-MAINS:

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

1.14 LOAD BALANCING:

Balancing of circuits in three phase installation shall be planned before the commencement of wiring, chart prepared, and submitted with drawing.

1.15 COLOUR CODE OF CONDUCTORS:

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

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

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

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

iii)Weight of conductor .... 2.52 Kg/Km minimum.

iv) Resistance of conductor at 20 degrees... 60 Ohms/Km,

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

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

vii) Overall diameter of insulated conductor. 1.2mm uniform

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

1.16 MOUNTING HEIGHT DETAILS

1.16.1 - The bottom of the light/fan switch board shall be at 1.0 meter above the finished floor level unless otherwise specified. Enough space for smooth usage, operations by user.

1.16.2- All plugs and socket outlets shall be, only Spring female contact sockets, of 5/6 pin type and the appropriate pin of socket shall be connected to the earthing system.

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

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

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

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

1.16.4 All Bracket light fittings, unless otherwise specified shall be at a height of 2.1 meters above the floor level unless otherwise specified for some locations, coordinated with interior drawings.

1.16 .5 Unless otherwise specified, the ceiling fans shall be hung at 2.75 meters above the finished floor level.

1.16 .6 Lamp holders in bath rooms are to be shrouded with insulating materials and fitted with protective shield.

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

2.0 CABLES:

2.1. GENERAL

MV Cables shall be supplied, laid tested and commissioned in accordance with drawing specifications, relevant Indian Standards specification, Indian Electricity Act and manufacturer's instructions.

The cable shall be delivered at site in original drums with manufacturers name clearly written on the drums.

2.2. MATERIAL

MV CABLES: MV Cables shall be PVC insulated aluminium conductor armored and unarmored cables conforming to IS: 1554 (part I&II)-1976 & IS: 694-1977 (PVC Insulated cables for working voltages up to and including 1100

volts (second revision) with latest amendments. MV cables shall be suitable for underground use and laid in trenches, ducts, cable trays, under roads and paved areas. MV Cables shall be termite resistant and shall be of approved make.

2.3. JOINTS IN CABLES

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

2.4. JOINTING BOXES FOR CABLES

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

2.5. JOINTING OF CABLES

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

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

2.6. FILLING OF EPOXY COMPOUND

Equal quantities of resin and hardener shall be taken and mixed thoroughly by hand until the mixture is free from white patches and has uniform colour. No water, oil or any other liquid shall be added to the mixture to make it soft as this will affect the properties of the compound. The mixture shall be

used within 30-40 minutes of mixing.

The surface on which epoxy compound is to be used shall be free from dust, rust, oil, grease and shall be dry. No disturbance or movement of joint shall be made till the epoxy compound has completely hardened. A smooth surface can be made by rubbing a damp cloth smoothly on the compound before it sets.

The joints shall be painted after it has completely hardened.

2.7. CABLES TERMINATION

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

2.8. BONDING OF CABLES

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

2.9. LAYING OF CABLES

Cables shall be laid by skilled and experienced workmen using adequate rollers to minimize stretching of the cable. The cable drums shall be placed on jacks before unwinding the cable. Great care shall be exercised in laying cable to avoid forming kinks. The drums shall be unrolled and cables run over wooden rollers in trenches at intervals not exceeding 2 meters.

Cables shall be laid at depth of 750mm depth below ground level in the case of MV Cables. A cushion of sand, not less than 75mm shall be provided both above and below the cable, joint boxes and other accessories. HV and MV cables shall not be laid in the same trench and/or alongside of water main. The cable shall be laid in excavated trench 80mm layer of sand shall be spread over the cable.

The cable then shall be lifted and placed over the sand bed. The second

layer of 80mm sand then be spread over the cable. The relative position of the cables laid in the same trench shall be preserved and the cables shall not cross each other as far as possible.

At all changes in direction in horizontal and vertical planes, the cable shall be bent smooth with a radius of bend not less than 12 times the diameter of cable. Minimum 3 M long loop shall be provided at both sides of every straight joint and 5 Meters at each end of the cable. Distinguishing marks shall be made on the cable ends for identification. Insulation tapes of appropriate voltage and in red, yellow and blue colours shall be wrapped just below the sockets for phase identification. Aluminium Labels etched with the size of cable shall be provided around the two ends of each cable.

2.10. PROTECTION OF CABLES

The cable shall be protected by placing burnt bricks over the cables 600mm wide on the top layer of sand for the full length of underground cable. Where more than one cable is running in the same trench, the bricks shall cover all the cables and shall project a minimum of 80mm on either side of the cable.

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

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

2.11. CABLES INSIDE BUILDINGS

Cables inside buildings shall be laid either in masonry trenches or carried on through trays or brackets. Where cables run in ducts inside the buildings the cables shall be adequately clamped to angle iron brackets, secured to the wall, as directed and approved by the Consultant. Where cables are suspended from ceilings, they shall be carried over troughs or trays as directed and approved by the Architect. The supports shall be placed not more than 1.0 meter apart.

All cables passing through walls below paved area, and concrete shall run through stone ware pipes or Hume pipes of adequate diameter recessed or exposed as directed. Cables running along walls shall be supported and clamped to saddles, or hanger rigidly anchored at close intervals. Clear space between parallel cables shall be equal to the diameter of the cable but not less than 50mm. Where called for cable trenches shall be filled with fine sand.

The contractor shall ensure that hangers, brackets and other supporting arrangements for cables are placed in proper position at the time of building the walls, concreting slabs, etc. cutting holes or opening in concrete may be carried out only with prior permission of the Architect.

All excavations and back fill including timbering, shoring and pumping required for the installation of the cables shall be carried out as per the drawings and requirements laid down elsewhere. Trenches shall be dug true to line and grades. Back fill for trenches shall be filled in layers not exceeding 150mm. Each layer shall be properly rammed and consolidated before laying the next layer. The Contractor shall restore all surfaces roadways, sidewalks, curbs, walls or other works cut by excavation of their original condition, to the satisfaction of consultant.

2.12. MARKERS AND WARNING PLATES

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

2.13. TESTING OF CABLES

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

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

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

a. Insulation Resistance test (Sectional and Overall)

b. Continuity Resistance Test.

c. Sheath continuity Test.

d. Earth Test.

e. Physical Dimensions Test.

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

3.0 EARTHING

3.1 EARTHING

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

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

3.2. EARTHING CONDUCTORS

All earthing conductors shall be of high conductivity electrolytic copper of 99.95 % purity and shall be protected against mechanical injury or corrosion.

3.3. SIZING OF EARTHING CONDUCTORS

The cross-sectional area of copper earthing conductor shall be same as the active conductor for sizes of active copper conductor up to 4.0 sq.mm and shall be half the size for 16 sq mm active copper conductor and above. All fixtures, fans, outlet boxes and junction boxes shall be earthed with 1.5 sq.mm PVC Insulated copper conductor wires. All power sockets and single-phase A/C units shall be earthed with 4.0 PVC Insulated copper conductor wires. All Three phase Final Distribution Boards shall be earthed with 2 nos 4 mm dia

bare copper conductor wires. The sizes of the earth continuity conductors should not be less than half of the largest current carrying conductors.

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

3.4. CONNECTION OF EARTHING CONDUCTORS

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

3.5. PROHIBITED CONNECTIONS

Neutral conductor, sprinkler pipes, or pipes conveying gas, water, or inflammable liquid, structural steel work, metallic enclosures or cables and conductors, metallic conduits and lightning protection system conductors shall not be used as a means of earthing an installation or even as a link in an earthing system.

The electrical resistance of metallic enclosures for cables and conductors measured between earth connections at the main switchboard and any other point on the completed installation shall be low enough to permit the passage of current necessary to operate fuse or circuit breakers and shall not exceed 1 ohm.

3.6. PROTECTION FROM CORROSION

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

3.7. EARTHING STATION

Plate Electrode Earthing: Earthing electrode shall consist of a tinned copper plate not less than 300mm x 300mm x 3mm thick as called for in the Schedule. The plate electrode shall be buried as far as practicable below

permanent moisture level but, in any case, not less than 4.2 meters below ground level. Wherever possible earth electrodes shall be located as near the water tap, water drain or a down take pipe as possible.

Earth electrodes shall not be installed in proximity to a metal fence. It shall be kept clear of the buildings foundations and in no case shall it be nearer than 2 meters from the outer face of the wall.

The earth plate shall be set vertically and surrounded with 150mm thick layer of charcoal, dust and salt mixture. 20mm GI pipe shall run from the top edge of the plate to the ground level. The top of the pipe shall be provided with a funnel and a mesh for watering the earth through a pipe. The funnel over the GI Pipe shall be housed in a masonry chamber, approximately 300mm x 300mm x 300mm deep. The masonry chamber shall be provided with a cast iron cover resting over a GI frame embedded in masonry. Refer Sketch for additional details.

Pipe Electrode Earthing: Earthing electrode shall consist of a Pipe specified in BOQ item, Indian Tube Company make or approved equal not less than 40mm dia and 4.5 meters long, (pipe wall thickness as manufacture) GI Pipe electrode shall be cut tapered at the bottom and provided with holes of 12mm dia drilled at 75mm interval up to 2.5 meters length from bottom.

The electrode shall be buried vertically in the ground as far as practicable below permanent moisture level with its top not less than 1.25 M below ground level. The electrode shall be in one piece and no joints shall be allowed in the electrode. Wherever possible earth electrodes shall be located as near water tap, water drain or a down take pipe. Earth electrodes shall not be located in proximity to a metal fence. It shall be kept clear of the building foundations and in no case shall be nearer than 2 meters from the outer face of the wall. Refer Sketch for additional details.

The pipe earth electrode shall be kept vertically and surrounded with 150mm thick layer of charcoal dust and salt mixture up to a height of 2.5 meters from the bottom. At the top of the electrode a funnel with a mesh shall be provided for watering the earth. The main earth conductors shall be connected to the electrode just below the funnel, with proper terminal lugs and check nuts.

The funnel over the GI pipe and earth connection housed in a masonry chamber, approximately 350mm deep. The masonry chamber shall be provided with a cast iron cover resting over a CI frame embedded in masonry.

3.8. EARTH CONNECTION

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

Earthing conductors outside the building shall be laid 600mm below the finished ground level. The over lapping in copper strips at joints where required, shall be minimum 75mm. The joints shall be riveted and brazed with copper rivets and greased in approved manner. Sweated lugs of adequate capacity and size shall be used for all termination of wires above 1 Sq.m size and bare copper wire above 2.0mm dia. Lugs shall be bolted to the equipment body after the metal body is cleaned of paint and other oily substance and properly tinned.

The earth wires entering the Final Distribution Boards shall be terminated with copper sockets crimped to its ends and tightened to the terminal with the help of flat end brass screws.

3.9. EARTH RESISTANCE

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

3.10. RESISTANCE TO EARTH

The resistance of each earth system shall not exceed 1.0 ohm in the case of

Medium Voltage system and 0.5 ohm in the case of High Voltage system.

4 TESTING.

4.1. GENERAL

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

a) Wiring Continuity Test

b) Insulation Resistance Test

c) Earth Continuity Test

d) Earth Resistivity Test

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

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

4.2. TESTING OF WIRING

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

4.3. INSULATION RESISTANCE TEST

The insulation resistance shall be measured by applying between earth and the whole system of conductors, or any section thereof with all fuses in place and all switches closed (except in concentric wiring) all lamps in position of both poles of the installation, otherwise electrically connected together, a direct current pressure of not less than twice the working pressure (provided that it does not exceed 660 volts for medium voltage circuits) be applied. Where the supply is derived from A.C. three phase system, the neutral pole of which is connected to earth, either direct or through added resistance, pressure shall be deemed to be that which is maintained between the phase conductor and the neutral.

The insulation resistance measured as above shall not be less than 50 divided by the number of points on the circuit provided that the whole

installation shall not be required to have an insulation resistance greater than one mega ohm.

The insulation resistance shall not be measured between all conductors connected to one phase conductor of the supply and all the conductors connected to the middle wire or to the neutral or to the other phase conductors of the supply. Such a test shall be carried out after removing all metallic connections between the two poles of the installation and in these circumstances the insulation resistance between conductors of installation shall not be less than that specified above.

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

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

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

4.5. EARTH RESISTIVITY TEST

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

4.6 TEST CERTIFICATES

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

5.0 SAFETY REQUIREMENTS

5.1 SCOPE

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

5.2 REQUIREMENTS

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

(a)Insulation Mats

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

(b)First Aid Charts and First Aid Box

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

(c)Danger Plate

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

(d)Fire Extinguishers

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

(e)Fire Buckets

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

(f)Tool Box

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

(g) Caution Board

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

(h)Key Board

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

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

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

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

6.1. CONSTRUCTION FEATURES

The Distribution Boards and Panels shall be metal enclosed sheet steel cubical, indoor, dead front, floor mounting type. The distribution boards shall be totally enclosed, completely dust and vermin proof. Gaskets between all adjacent units and beneath all covers shall be provided to render the joints dust proof. Panels and Distribution boards shall be preferably arranged in multitier formation.

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

All covers shall be properly fitted and square with the frame, and holes in the panel correctly positioned. Fixing screws shall enter into holes tapped into an adequate thickness of metal or provided with hank nuts. Self-threading

screws shall not be used in the construction of MV Panel & distribution boards. A base channel of 75mm x 40mm x 5mm thick shall be provided at the bottom. A minimum of 200 mm between the floor of MV Panel & Distribution board and lower most unit shall be provided. The MV Panel & Distribution Boards shall be of adequate size with a provision of 20% spare space to accommodate possible future additional switchgear in addition to spare feeders.

Knockout holes of appropriate size and number shall be provided in the Distribution Board and Panels in conformity with the location of incoming and outgoing cables. Panels and distribution boards shall be provided with removable sheet steel plates at top and bottom to drill holes for cable entry at site. MV Panel shall be of Extendible type.

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

6.2. CIRCUIT COMPARTMENTS

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

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

6.3. INSTRUMENT ACCOMMODATION

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

6.4. BUS BARS & BUS BAR CONNECTION

The bus bar and interconnections shall be of electrolytic Copper of

99.9 % purity of rectangular cross sections suitable for full load current for phase bus bars and full rated current for neutral bus bar and shall be extendible on either side. Minimum 200 Amps capacity bus bars shall be provided in the distribution boards.

The bus bars and interconnections shall be insulated with PVC heat shrinking sleeves and color coded. The bus bars shall be supported on unbreakable, non-hygroscopic insulated SMC supports at regular intervals to withstand the forces arising from short circuit in the system. All bus bars shall be provided in a separate chamber and properly ventilated. The current density of copper shall be 1.6 Amps per sq.mm cross sectional area of Bus bar.

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

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

All connections between bus bars and switches and between switches and cable alley terminals shall be through solid copper strips of proper size to carry full rated current and insulated with PVC heat shrinking sleeves.

All the M V Panels and SDBs shall be completely factory wired, ready for connection. All the terminals shall have adequate current rating and size to suit individual feeder requirements. Each feeder shall be clearly numbered from left to right to correspond with wiring diagram. All the switches and feeders shall be distinctly marked with a small description of the service installed. Minimum width of busbar Alley shall be 300 mm and that of cable alley shall be 450 mm.

6.5. TERMINALS

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

6.6. WIREWAYS

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

6.7. CABLE COMPARTMENTS

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

6.8. METERS

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

6.9. CURRENT TRANSFORMERS

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

6.10. INDICATING PANEL AND METERING EQUIPMENT

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

6.11. MOULDED CASE CIRCUIT BREAKERS (MCCB)

MOULDED CASE CIRCUIT BREAKERS(MCCB) : MCCB's shall be in accordance with IS: 2516-1985 & IEC 157-1 with the latest amendments. It shall be enclosed type made of Heat resistant high strength, flame retarding, thermosetting material rated for 500 V, 50 Hz. It shall have three position

indicator 'ON', 'OFF' & 'TRIP' at top, bottom & middle position. It shall be provided with shunt trip and additional 2 Nos. NO & NC contacts. The minimum breaking capacity of MCCB's shall be 20 KA up to 100 AMPS rating and 35 KA for MCCB's above 100 AMPS rating up to 200 A and 50KA for MCCBs above 200 A. All MCCB.s shall have door operating handle (Rotary Operating Handle). The short circuit with standing capacity shall be ICS Rating and not ICU Rating.

6.12. EARTHING

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

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

6.13. PAINTING

All sheet steel work shall undergo a process of degreasing pickling in acid, cold rinsing, phosphating, passivating and then sprayed with a high corrosion resistant primer. The primer shall be baked in an oven. The finishing treatment shall be by application. Two coats of synthetic enamel paint of approved colour and powder quoted. The seven Tank process shall be adopted.

6.14. LABELS

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

6.15. SHOP DRAWING

Before fabricating the Panels and the SDBs/FDBs the contractor has to submit shop drawing with the wiring diagram for all the Panels and SDBs/FDBs

to the Consultant and get approval from the Consultant.

6.16. INSPECTION

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

6.17. TEST CERTIFICATES

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

6.18 MINIATURE CIRCUIT BREAKER & FINAL DISTRIBUTION BOARDS

Miniature circuit breaker shall be quick make and break type and confirm with Indian Standards IS: 8828 – 1978 (Specifications for Miniature Air Break Circuit breakers for voltage not exceeding 1000V) The housing of MCB's shall be heat resistant and having a high impact strength. The fault current of MCB's shall not be less than 9000 Amps at 230 volts. The MCB's shall be flush mounted and shall be provided with trip free manual operating mechanism "ON" and "OFF" indications.The MCB contacts shall be silver nickel and silver graphite alloy coated with silver. Proper arc chutes shall be provided to quench the arc immediately. MCB's shall be provided with magnetic fluid plunger release for over current and short circuit protection. The over load or short circuit devices shall have a common trip bar in the case of DP and TPN Miniature circuit breakers. The MCB shall be tested and certified as per Indian Standards prior to installation.

All final distribution boards shall be provided with MCB's. TPN final distribution boards shall consists of 3 rows of single pole MCB's for each circuit, and each phase shall be connected to the incoming supply through double pole MCB isolator. Separate neutral bus bars shall be provided for each phase in the case of TPN Distribution Boards. In case Earth Leakage Circuit Breaker (ELCB) has to be provided in Final Distribution Boards then on the incoming side instead of DP MCB Isolator a DP ELCB shall be provided of Current rating same as that of DP MCB Isolator and current sensitivity maximum of 100mA.

The ELCB shall conform to IS : 12640 - 1988 (Residual Current-

Operated Circuit Breakers- Specifications) Solid links between MCB Isolator and backed by HRC fuse/Rewireable fuse and Neutral bus bar shall be provided.

The Neutral shall be looped from one phase to another through DP Isolators. MCB's shall be provided on the phase or live conductor of each circuit and a neutral bar for the earthed neutral. The individual MCB in each row shall be detachable without disturbing the row of MCB's. Phase separation barriers of 3mm thick Bakelite sheet shall be provided between the back of MCB's fitting 3mm thick Bakelite sheet cover shall be provided for each phase.

There shall be ample space behind the back of MCB's to accommodate all the wiring. All the internal wiring of final distribution Boards shall be concealed behind 3mm thick Bakelite sheet. All the distribution boards shall be completely factory wired, ready for connection. All the terminals shall have adequate current rating and size to suit individual feeder requirements. Each circuit shall be clearly numbered from left to right to correspond with wiring diagram. All the switches and circuits shall be distinctly marked with a small description of the service installed. A four way 60 A Brass/Copper neutral link shall be provided with terminals suitable to receive 16 sq mm stranded copper wires with end sockets. The final Distribution Boards shall be fabricated as per consultants' design.

7. INTELLIGENT ADDRESSABLE FIRE ALARM SYSTEM

The addressable and intelligent system shall be such that photoelectric /multi criterion sensors, manual call points, etc., can be identified with point address. The system shall be capable of:

- Setting smoke sensor sensitivity remotely (from the Fire Work Station) to either high sensitivity manually or on a pre-programmed sequence e.g. occupied/unoccupied period. The FAS shall be able to recognize normal and alarm conditions, below normal sensor values that reveal trouble condition, and above normal values that indicate either a pre alarm condition or the need of maintenance.

- Read-out or address an actual space temperature at thermal detector points. The operator shall also be able to adjust alarm and pre alarm thresholds and other parameters for the smoke sensors.

- Provide a maintenance/pre-alert alarm capability at smoke sensors to prevent the detectors from indicating a false alarm due to dust, dirt etc.

- Provide alarm verification of individual smoke sensors.
- Provide local numeric point address and LED display of device and current condition of the point.
- Provide outputs that are addressable. The distributed Intelligent Fire Alarm Control Panel (FACP) shall function as fully stand-alone panel as well as providing a communication interface to the central station. FACP shall have its own microprocessor, software and memory and should be listed under UL864. The memory data for panel configuration and operation shall reside in non-volatile memory (EEPROM). It shall be possible to command test, reset and alarm silence from both the FACP and the central console. FACP switches shall allow authorized personnel to accomplish the following, independent of the central console:
- Initiate a general alarm condition.
- Silence the local audible alarm.
- It shall be possible to acknowledge (Silence the local FACP audible without silencing the alarm indicating devices (hooters).
- Reset all zones (Logical Point Group) / points, after all initiating devices have returned to normal.
- Perform a complete operational test of the microprocessor and memory with a visual indication with each board.
- Test all panel LEDs for proper operation without causing a change in the condition of any zone (Logical Point Group)
- Walk Test FACP shall be backed up with its built in UPS power and shall also be connected to central DG Power available in the building.

- Software zones/loops shall be circuited and protected by Fault Isolation Modules such that in the event of a zone/loop short-circuit, not more than twenty (20) devices shall be left non-functional.
- Monitor modules shall be provided to monitor and address contact-type input devices.
- The monitor module shall be supervised by FACP.
- The FACP shall have Drift Compensation facility to compensate for environment.
- FACP shall be provided with following features :
- Charger Rate Control
- Control-by-Time
- Non-Alarm Module Reporting
- Day/Night Sensitivity
- Periodic Detector Test
- Device Blink Control
- Remote Page
- Drift Compensation
- Trouble Reminder
- NFPA 72 Sensitivity Test
- Verification Counters
- System Status Reports
- Walk Test
- Security Monitor Points
- Maintenance Alert
- Alarm Verification
- System Configuration Report
- Printer Interface
- System Point Report
- Event Historical log
- Programmable Automatic Timed and Manual Signal Silence
- Programmable Manual Signal Silence Inhibit Timer

- Control-By-Event with Boolean Logic and Timer Control
- The FACP should truly field programmable.
- The FACP should have a degraded mode of operation.
- Power supply unit of FACP shall have following characters:
- The main power supply shall be 230 VAC±10%, 50 Hz±1% and shall in turn provide all necessary power of the FACP.
- It shall provide a battery charger for 24 hours for standby power using dual-rate charging technique for fast battery recharge.
- It shall provide a very low frequency sweep earth fault detect circuit, capable of detecting earth faults on sensitive addressable modules.
- It shall be power-limiting using Positive Temperature Coefficient (PTC) resistor.
- It shall provide indication for battery voltage and charging current.

DETECTORS & ADDRESSABLE DEVICES

General features common to all detectors:

- Compatibility: All automatic fire detectors shall be interchangeable without requiring different mounting bases or alterations in the signal panel.
- Sensitivity: On average 30 mgs of burned material per cu.m. (As measured in a 1 cu.m. chamber) shall release an alarm sensitivity which shall be adjustable according to the use of the space.
- Power Consumption: Each detector shall use the minimum of power, for economic circuits, so that it shall have capacity to connect at least 99 detectors, 50 modules and 20 fault isolator modules in one loop.
- Built-in-response indicator: Each detector shall incorporate indicator “LED” at the detector which shall blink during normal condition and light up on actuation of the detector to locate the detector which is operated. The detector shall not be affected by the failure of the response indicator lamp.
- Maintenance: All detectors shall be fitted either with plug-in system or bayonet type connections only, from the maintenance and compatibility point of view.
- Construction: The detector shall be vibration and shock proof. When disassembling for cleaning purposes, its components must not be damaged by static over voltage.

- Atmospheric and Thermal Disturbance: The detector shall so designed as to be practically immune to environmental criteria such as air currents, humidity, temperature fluctuations, and pressure and shall not trigger false alarm, due to the above conditions.
- Continuous Operation: An alarm release shall not effect a detector's functioning. After resetting the alarm, the detector shall resume operation without any readjustment.
- Adaptability to ambient conditions: Detectors shall be designed for adaptability to humid locations. No performance deterioration shall be acceptable.
- The monitor module shall provide address-setting and shall also store an internal identifying code which the Fire Alarm Control Panel shall use to identify the type of device.
- The control module shall provide address-setting and shall also store an internal identifying code which the control panel shall use to identify the type of device.
- All field hooters should preferably be addressable and software configurable. All hooters should be able to provide at least a minimum of 3 different tones, which should be user configurable. The minimum decibel level of each hooter should be 90db. All hooters should be UL/FM listed. All hooters shall have coupled strobe lights of 110Cd intensity.

EMERGENCY VOICE EVACUATION (EVAC) & TALK BACKFIREMAN PHONE SYSTEM

The FACP shall contain all equipment required for all audio control, telephone system control, signaling and supervisory functions. This includes speaker zone indication, telephone circuit indication and control, digital voice units, microphone and main telephone handset.

Function: The EVAC system equipment shall perform following functions:

- Operate as a supervised dual channel emergency voice communication system.
- Operate as a two-way emergency telephone system control center.
- Audibly and visually annunciate the active or trouble condition of every speaker circuit and telephone circuit.

- Audibly and visually annunciate any trouble condition of tone generators and digital voice units required for normal operation of the system.
- Provide automatic, digitally-recorded voice messages and tones which may be field-programmed through the microphone.

FIRE ALARM GRAPHICS SOFTWARE (FAS)

- The status of each detector shall be monitored by the FAS.
- Using the FAS, the operator shall be able to adjust the sensitivity of any detector.
- Using the FAS, the operator shall be able to define the entire database for the file system. Fire system which are not field programmable shall not be accepted.
- The FAS operator shall be able to acknowledge alarms or trouble messages at the FAS.
- It shall be necessary for all alarm or trouble conditions to be acknowledge at the fire system central panel.

8.0 General Note:

1.	All wires shall be FRLS PVC insulated copper conductor. Point wiring rates are inclusive of 3 x2.5 sq mm insulated copper conductor wires for circuit. (from DB to switch board).
2.	Wherever the occupancy sensors and daylight sensors in the closed room and workstations, the wiring from DB to sensor and sensor to switch board shall be included in the point wiring rates.
3.	All sockets to be checked with a Check Plug socket tester for live-neutral reverse, no earth, neutral fault, live earth reverse, neutral earth reverse.
4.	The Circuit No. and DB no. label shall be provided on all UPS, RAW sockets and switchboards with label printer.
5.	Colour coding for conduits to be done for different systems. The whole length of conduits to be painted
a	Light & Power Black
b	Emergency Light -Green
c	Data Cable- White
	All circuit & point wiring shall be colour coded & shall have ferruling on both end for circuit identification complete as required etc. Labelling on all the switches and sockets to be done with respect to DB reference, phase and circuit no.

	Earth loop Impedance Test to be performed. RCD test to be done. Cable Insulation Tests to be done.
	The word UPS shall be printed on all UPS sockets.
	The word RAW shall be printed on all RAW sockets.
	Contractor is required to submit samples of all types of switches and sockets to Consultant and Architects representative for approval before ordering the material.
	Cables
1	All cables to be glanded and crimped with suitable sized lugs. All Cable trays to be double earthed. All raceways and cable glands to be earthed with brass round earth clips and wires.
2	Earthing ring to be included in all the cable glands.
3	Sub main cables should be labelled at both ends.
4	Joints shall be allowed only at the 2 ends of the cables and not in between.
	Distribution Board & Panels
1	RCCB shall be Si type (Super Immunized) only for UPS DBs. The IP rating of the DB should be IP 43.
2	Provide DB charts in laminated sheets in all Distribution Boards
3	Provide insulated dedicated earth link in all UPS Panels
4	All MCCB's 250 Amps and above shall be Microprocessor based
5	All Light & Power panel, UPS and A.C. Panel incomer MCCB shall have Over current, Earth fault and short circuit protection.
6	All Incomer MCCB's in UPS Panels shall be Microprocessor based
7	The microprocessor based MCCBs shall have
	Over Load (Phase)
I	Current setting Ir (Ir=XIn) OFF 0.4 to 1.0 in steps of 0.1
Ii	Time delay, tr(Inverse) 10 sec at 6/r
Iii	Over Load (Neutral)
Iv	Current setting In (Intrl =XIr) 0.5, 0.75&1.00 Intrl
V	Inverse 10 sec at 6 Intrl/Fixed 200ms
Vi	Short Circuit setting -2- 10
Vii	Instantaneous - 1.5-1
8	All MCB's in UPS Panels shall be D Curve
9	In all Electrical panels protective acrylic sheet to be provided in cable alley and feeders.
10	The meters shall be able to monitor all major power quality parameters Voltage, current, frequency, KVAH, KWH, Power factor and individual, harmonics, ethernet ready - IEC-625-22.
11	The ATS shall be 4 poles with inbuilt manual operating switch. In case the controller of the ATS fails it should be capable of transferring the load while the ATS is in maintenance. The ATS and controller should be same make.
12	Provide On / Off and trip indicating lamp on main incomer & bus coupler

	only.
13	Panel construction shall be Form 3b for all Panels with MCCB outgoings and Form 2b for all Panels with MCB's outgoings.
14	The Earth fault release/relay and CBCTs shall be same make as OEM Switchgear been used in the Panels. It shall not trip on imbalance of load.
15	The breaking capacity and trip setting of the breakers shall be finalized as per the final design. The report shall be as per ETAP analysis.
16	All MCCB's Breaking Capacity shall be enhanced to 36KA due to cascading
17	All multifunctional meter shall be Schneider make with RS 485 MODBUS RTU half-duplex interface in all the Panels detailed below.

9.0 Fire extinguishers

This is one of the main and most important type of fire safety gadget which needs to be positioned at strategic locations. The Fire Extinguisher including all accessories shall be delivered and should be brand new. The contractor should also guarantee that all the components supplied by the contractor are licensed and legally obtained. The fire extinguishers procured must include comprehensive on-site warranty of -1- year for all type of fire extinguishers except modular automatic fire extinguishers which shall carry a warranty of -3- years from the date of installation and commissioning of the equipment. The Service Provider shall be fully responsible for the manufacturer's warranty in respect of proper design, quality and workmanship of all equipment's, accessories, etc., covered by the offer.

The contractor must warrant all equipment's, accessories, spare parts etc., against any manufacturing defects during the warranty period. As per requirement of details all fire extinguisher with date of installation and due date of refilling shall be made available in the premise. A demonstration shall be given by the service provider after every 3-4 months to the staff with proper explanation.

Following are the general norms to be followed while positioning the Fire extinguishers at various locations in a office:

In a normal size office of 1200 sq. ft. – 1500 sq. ft. maximum of 6-8 fire extinguishers are to installed as under:

9.1 -CO_2 gas type 4.5 kgs – Conforming to IS15683.

9.2 -ABC Powder type / DCP type 4.0 kgs or approved kg –Conforming to IS 15683.

<u>9.3 Modular type at UPS and Electrical junction 2 /3 kgs or approved</u>

Automatic detection and suppression in one single system, no human intervention is needed for the activation purpose; no power back up needed; easy to install and automatic discharge at set pre-defined temperature. ABC powder automatic fire extinguishers for 24 x 7 protection of unmanned closed areas shall be placed 1 above the UPS and if there is a possibility above the Main Electrical DB. If the size of a office is large suitable fire extinguishers of different type shall be installed as per the recommendations of the Security Officer / Fire Officer / or norms. These directives are suggestive, in case of any modifications or additional security requirement etc. is assessed based on the geographical or local situation, concurrence for the same needs to be obtained from the client.

9.4 BATTERY

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

9.5 Battery Charger

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

9.6 Construction features

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

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

Output-DC output shall be 24 volts. DC bridge rectifier shall be of silicon type,

having full wave rectification. Suitable contactor, relay, reset shall be provided as required.

9.7 CABLES

All PVC insulated FRLS copper conductor stranded cables shall be 650 volts grade and shall generally conform to IS-1554-1988 and meet the signal cabling requirement of the system manufacturer. Strands of cables shall not be cut to accommodate & connect to the terminals. Terminals shall have sufficient cross-sectional area to take all the strands. Cables shall be laid by skilled and experienced workmen using adequate rollers to minimize stretching of the cable. The cable drums shall be placed on jacks before unwinding the cable. Great care shall be exercised in laying cables to avoid forming kinks. At all changes in direction in horizontal and vertical planes, the cable shall be bent smooth with a radius as recommended by the manufacturers.

All cables shall be laid with minimum one diameter gap and shall be clamped at every meter and shall be tagged for identification with aluminum tag and clamped properly. Tags shall be provided at both ends and all changes in directions both sides of wall and floor crossings. All cable shall be identified by embossing on the tag the size of the cable, place of origin and termination. These shall be measured on linear basis including the fittings required like, end termination junction boxes

10.POINT WIRING

10.1 The rates for all point wiring items shall include :

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

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

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

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

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

6.All fixing accessories such as clips, brass screws/brass washers rawl plugs etc.

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

a) Ceiling rose .

b) Connector.

c) Back plate.

d) Socket outlet.

e) Lamps Holder.

f) Any other terminal outlet boxes.

g) Ceiling fan and Exhaust fan.

8. Switch, socket outlet as called for.

9. Cable/wire as required up to lamp holder.

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

11. All accessories necessary to complete wiring as specified.

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

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

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

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

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

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

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

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

Providing 15 Amps capacity Bakelite terminal Blocks for terminating the phase, neutral and earth wire at each fixture location.

PVC insulated copper conductor wire ends before connection shall be properly soldered (at least 15 mm length) with special Cu solder for copper conductor or shall be properly crimped with copper lugs/sockets as the case may be. Strands of wires shall not be out for connecting to the terminals.

All stands of wires shall be soldered at the end before connection. The connecting brass-screws shall have flat ends. All looped joints shall be soldered and connected through terminal block/connectors.

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

10.2 CONDUITING & WIRING FOR TELEPHONE & COMPUTER SYSTEM

The rates for conduit work shall include:

1. All necessary specials and fittings.
2. M. S. inspection, junction and outlet boxes as required.
3. 3/5 mm thick Perspex sheet covers for inspection & junction boxes.
4. All fixing accessories such as clips, nails, brass screws/brass washers, etc.
5. 2 mm dia G.I. pull wires in conduit work, wherever necessary.
6. Providing and fixing approved saddle, hooks and grouting the same as required in the case of all exposed conduit work.
7. Embedding conduit and allied fittings including the outlet boxes in walls, floors etc., during construction and/or in chases including cutting chases and making good with cement mortar as necessary in the case of concealed conduit work.
8. Painting all inspection, junction and outlet boxes.
9. PVC conduit for concealed conduit wiring.
10. Painting of Hylam /Perspex sheet cover from inside to suit the colour of the surrounding wall with two coats of paint.
11. Supply and fabrication of G.I. outlet boxes.
12. The outlet cover plate for Telephone outlets shall be made of I.S.I. grade Urea Formaldehyde Molding powder. The cost of outlets shall include the cost

of cover plates, cadmium fixing screws etc. also.

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

10.3 CABLES, MAINS AND SUB-MAINS

The rates for all items of work shall include:

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

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

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

4.Effecting adequate and proper connections at terminations.

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

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

7. Clamping to supports where laid in trenches.

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

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

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

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

10.4 DISTRIBUTION BOARDS

1. The supporting rigid steel frame work.

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

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

4. Building into masonry/concrete work including all necessary cutting and

grouting with cement mortar 1:2.

5. Effecting adequate and proper connections.

6. Effecting proper bonding to earth.

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

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

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

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

10.5 FIXING OF LIGHTING FIXTURES AND FANS

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

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

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

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

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

d. Bonding with common earth wires.

3. Drilling holes in supports where required.

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

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

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

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

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

9. Use G.I. suspenders and clamping to the slab with dash fasteners (4 per

fitting), including turn buckle arrangements for adjustable heights for hanging. They should be the same suspenders as used for hanging the False Ceiling grid ceiling.

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

LIST OF APPROVED MAKES

S.NO	ITEM	APPROVED MAKE
1. 1	HT VCB	Seimens,ABB, L&T, CG, Areva
2.	HT Cable	Havells, Finolex, Torrent, Polycab
3.	Dry Type Transformer	Kirloskar, ABB, T&R, Crompton, Electrotherm, Powerlite
4.	DG Sets & AMF Panel	Cummins,Kirloskar,Sterling,Catterpillar
5.	Cable Joint Kit	Raychem,Denson,M-Seal
6.	Enclosure Manufacturer	Active Engineers, Elemec Ltd, Prima Automation, Shivshakti, Swati Switchgears.(Shall Be CPRI Approved)
7.	MCB/ELCB/RCCB/ELMCB	Legrand Dx3, ABB,Hager,Schneider,C&S, L&T, Seimens, Havells.
8.	MCCB/ACB	Legrand Dx3/Dpx3, ABB Schneider,Siemens, L&T Upower,Mitssubishi, Havells.
9.	Distribution Box	Legrand, ABB, Hager, Schneider, C&S,L&T, Seimens, Mitssubishi, Havells.
10.	Changeover Switch	HH Elecon,L&T, ABB, HPL,C&S Havells.
11.	Capacitor	Havells, Epcos, Subodhn, Schneider, Matrix
12.	Push Button	Siemens,ABB,L&T,Schneider, Havells.
13.	Indicating Light	Siemens,ABB,L&T
14.	Timers	L&T,Siemens,ABB,Conzerv
15.	Selector Switch	L&T,Seimens,Kaycee
16.	Automatic Transfer Switch	L&T,Hpl,Cummins,Havells
17.	CTS	Kappa,L&T,Areva,Maxwell,Ashmore
18.	PTS	Kappa,L&T,Areva,Maxwell,Ashmore
19.	Connectors	L&T, Schinder,Seimens,Abb
20.	Protection Relay	Areva,L&T,Abb,Seimens
21.	Analog/Digital Meter/Load Manager/MFM	Conserv,L&T,Schneider/Abb/Hpl .Elmeasure ,Legrand,Sems
22.	Iron Clad Switch With	KEW, Trishul,Super, C&S

	Rewireable Fuse/SFU	
23.	Metalclad Switch With Rewireable Fuse/SFU	Havells, KEW,C&S, Indoasian
24.	Main LT Cable	Avocab,Finolex,Primecab,Polycab,Diamond Power,Rrcable,Havells,Rr
25.	Cable Glands	Comet, HMI, Dowells, Siemens,Crompton,Hex
26.	Cable Lugs	Dowells,Johnson,Hex
27.	Bus duct	L&T,Schneider,C&S,Seimens,Legrand
28.	Accessories Of Conduit	Nihir,Precision,Polycab,BEC, Poly-Cab
29.	PVC Insulated Flexible Copper Conductor Cables Of 11000-Volt Grade	Finolex,Polycab,Rrcable,Havells,Esc,Bonton ,Kei
30.	Rigid FR PVC Conduit	Nihir,Precision,Polycab,BEC, Poly-Cab
31.	Tissino type switches & Sockets	Pointer-Trump, SSK-Topline Pc, Anchor-Penta Cheery,
32.	Modular Type Switches & Sockets	Legrand-Myrius-Blenze, Mk-Wrap Round, Anchor- Woods, Havells-Crabtree-Athena,L&T Englaze, North West
33.	PVC Tape	Steel Grip,Anchor
34.	M.S. Conduits And Accessories	BEC,AKG,Steel Craft, Rama,Disco
35.	Light Fixtures & Lamps	Philips,Wipro,Crompton,Lighting Technology, Tisva , Divinity Nirvana , Xal , Osram , Ensave,Bajaj ,Endo
36.	Ceiling Fan & Exhaust Fan	Usha,Cg,Orient,Havells
37.	Window/Split Type A.C. Machine	Carrier,Panasonic,Daikin,Hitachi,Bluestar
38.	Water Cooler	Voltas,Usha,Bluestar
39.	Geyser	Recold,Havells,Bajaj,Spherehot
40.	Motor Pump Set	Crompton,Amrut,Ksb,Uneel,Kirloskar
41.	Call Bell	Anchor/Orpat/Max
42.	Window/Split Type A.C.Machine	Carrier,Panasonic,Daikin,Hitachi,Bluestar
43.	Water Cooler	Voltas,Usha,Bluestar
44.	Geyser	Recold,Havells,Bajaj,Spherehot
45.	Cable Tray	Indiana,Rushabh,Profab, Kme/ Era Control System
46.	Aluminium Floor Raceway	MK /Legrand

47.	GI Floor Raceway	MK /Legrand
48.	PVC Wall Raceway	MK, Profab,Legrand
49.	UPS	Numeric,Eaton,Apc, Hitachi
50.	Inverter	Suvik,Sukam,Megatech
51.	SMF Battery	Panasonic,Exide,Global (Yuasa)
52.	GI Pipe/Poles	Tata/Jindal /Fabricated
53.	High Mast Poles	CG Or AS Approved By Consultants
54.	SMC Press Moulded Junction Box	Syntex Or AS Approved By Consultants
55.	Air Terminal	Map, LPI, Indesco, Jef,Obo, Powetrack
56.	Supporting Gayed Mast	Map, LPI, Indesco, Jef,Obo, Powetrack
57.	Lightning Stroke Recorder	Map, LPI, Indesco, Jef, Obo,Powetrack
58.	Copper bonded Rod & Chemical Compound	Map, LPI, Indesco, Erico, Rapid, Docksun
59.	Electrolytic/Chemical Earthing Kit	Greslo, Galaxy Earthing, Erico, Rapid, Docksun
60.	Fire Alarm Panel & Display Panel	Esser, Edward, Notifier, Honeywell, Morley/Ravel
61.	Repeater Panel	Esser, Edward, Notifier, Honeywell
62.	Addressable & Conventional Smoke Detectors	Esser, Edward, Notifier, Honeywell
63.	Intelligent Smoke & Heat Detectors	Esser, Edward, Notifier, Honeywell
64.	Addressable & Conventional Heat Detectors	Esser, Edward, Notifier, Honeywell
65.	Addressable & Conventional Beam Detectors	Esser, Edward, Notifier, Honeywell
66.	Fault Isolator	Esser, Edward, Notifier, Honeywell
67.	Response Indicator	Esser, Edward, Notifier, Honeywell
68.	Manual Call Point	Esser, Edward, Notifier, Honeywell
69.	Addressable Hooter	Esser, Edward, Notifier, Honeywell
70.	Fire Cable	RR cable, Finolex,Delton, Polycab
71.	RJ-45 Socket Outlet (Computer & Telephone)	Legrand-Myrius, MK-Wrap Round, Anchor-Woods, Havells-Crabtree-Athena
72.	RJ-11 Telephone Socket	Legrand-Myrius, MK-Wrap Round, Anchor-Woods, Havells-Crabtree-Athena

73.	Cat-6 Cable	Tyco Ele(AMP), Schinder Ele.(Digilink), R&M, Systimax, Molex, Legrand, Finolex, Dlink, Havells
74.	Cat-6e Cable	Tyco Ele(AMP), Schinder Ele.(Digilink),R&M,Systimax,Molex legrand, Finolex, Dlink, Havells
75.	Fiber Optic Cable & Other Accessories(patch cord)	Polycab,Havells,Schneider,Dlink,Digilink
76.	Telephone Tag Box	Krone
77.	Telephone Pair Wire	RR cable, Finolex, Delton, Polycab, Bonton
78.	EPABX	Avaya, NEC, Seimens
79.	Network Switch	Comnet, Cisco, HP, Matrix or approved by Consultant, D-Link, Make AMPS
80.	Ethernet Switch	Comnet, Cisco, HP, Matrix or approved by Consultant, D-Link, Make AMPS
81.	SFP Modules & Other Accessories	Cisco, Legrand, Dlink, Digisol, Siemens
82.	Patch Cords	Comnet, Cisco ,HP, Matrix or approved by Consultant
83.	U Racks	Vero President, Valrack, Spider, Schneider, Stecko Me
84.	Push Button Phone	Panasonic Or Approved By Consultants
85.	Program Phone	Panasonic Or Approved By Consultants
86.	Amplifier (Power & Booster)	Yamaha, Crown, Camco
87.	Audio Mixer	Allen & Heath, Yamaha, Sound craft
88.	CD/DVD/FM Player	Shure, Audiotech, Audiopower, JBL, Audioquest.
89.	Microphone	Shure, Audiotech, Audiopower, JBL, Audioquest.
90.	Multiplexer	Shure, Audiotech, Audiopower, JBL, Audioquest.
91.	Ceiling And Wall Speaker	Shure, Audiotech, Audiopower, JBL, Audioquest.
92.	Gooseneck Mic	Shure, Audiotech, Audiopower, JBL, Audioquest.
93.	Speaker Cable	RR cable, Finolex, Delton, Polycab
94.	CCTV	Honeywell, Avigilon, Schneider (Pelco), Sony,Bosch,Avtron,CP Plus
95.	Digital Videorecorder	Honeywell, Avigilon, Schneider (Pelco), Sony, Bosch

96.	Network Videorecorder	Honeywell, Avigilon, Schneider (Pelco), Sony, Bosch
97.	LED/LCD Displayunit	Sony, Samsung, Panasonic, Sharp
98.	VRV/VRF/MRV System Using Compressor Of Following Make Only.	Daikin/Voltas/Hitachi/Bluestar/ ETA Gree /Haier/ Midea/ Mitsubishi
99.	Y-Joints VRV/ VRF System	Toshiba/Hitachi/ Bluestar Mitsubishi Or Equivalent
100.	Propeller Fan	Carya Ire/ Kruger/ Nuair (UK)/ Nicotra
101.	Control Cables	Sky Tone/ Universal/ Delton/Finolex
102.	XLPE/PVC Insulated Aluminium Conductor Armored Power Cables	Sky Tone/Havells/ Universal/RPG Asian/Incab
103.	Communication Cable	Fusion/ Commscope / Contempt/Finolex/Polycab
104.	Cable Gland Double Compression With Earthing Links	Power/Grip Well /Baliga Lighting Ltd.
105.	PVC Insulated Copper ConductorStranded Flexible Wires	Finolex/ National Cables – NC/ Polycab/Sky Tone Havells
106.	PVC Conduit & Accessories (ISIApproved)	BEC/ Precision/ D Plast/ Polypack
107.	MS/ GI Conduit (Isi Approved)	BEC/ AKG/ Steel Kraft
108.	Accessories For MS/GI Conduit (ISI Approved)	Sharma Sales Corporation/ Super SalesCorporation
109.	Bimettalic Cable Lugs	Hax (Brass Copper Alloy India Ltd)/ Dowell's(Biller India Pvt. Ltd.)
110.	Lugs (Tinned Copper)	Dowell
111.	Slotted/Tray	Kelp/Fletco/Mm Enterprises.
112.	Grilles/ Diffusers	Carya Ire / Ravi Star/ Mapro/ Tristar
113.	Fire Dampers	Caryaire/ Conaire
114.	G.I. Sheet Metal Duct	Jindal/National/ Tata
115.	Fire Dampers Motors	Belimo/Siemens
116.	Self-Adhesive Sealing Gasket For Ducts	Prima Seal/ Air Flow/ Trocellen
117.	Hessian (Fire Treated)	Nav Air/ Pyro Guard
118.	Stick Pins	Prima Seal/ Air Flow
119.	Selector Switches/ Toggle Switch	Siemens/ L&T/ Kaycee
120.	Change Over Switch	Siemens/ L&T/ HH Elcon/ HPL-Socomech
121.	Protection Relay	Alstom/ L&T/ Siemens
122.	VCD/ Gravity Louvers/ Exhaust &Fresh Air Louvers	Cary Aire /Ravistar/Mapro/ Tristar
123.	Overload Relays With Built-In	L&T/ Minlec/Siemens/ Group Schneider

	Single-Phase Preventer	(MG) France
124.	UPVC Pipe For Drain	AKG/Polypack/Supreme
125.	CU- Pipes	Totaling /Rajco /Mazflow
126.	Expanded Polystyrene (T F Quality) (Pre-Moulded Pipe Section/Slab)	Thermolloyd/ Beard Sell/ Styrene Pakagings/ DebsProducts/ P R Pakaging/ Coolite/ Indian Packaging Services
127.	Cross Linked Polyethylene	Trocellen/Supreme
128.	Glass Wool	Owens Corning/ U.P. Twinga
129.	Closed Cell Elastomeric Insulation	Armacell/K-Flex/A-Flex
130.	Aluminum Tape	Johnson/ Birla 3M
131.	Acoustic Lining	UP Twiga/ Lloyd Insulation
132.	Non-Woven Polyster (Mikron)	Mikron
133.	Electrical Panel Board/ Motor Control Centre (Power Coated)	Tricolite/ Adlec Systems Pvt Ltd./Triton/ System PowerControl
134.	Electric Motor (TEFC)	Siemens/ Crompton/ Kirloskar/ ABB
135.	Starters/ Switch Gear	Siemens/ L&T/ Group Schneider (MG) France
136.	Miniature Circuit Breaker (MCB)	Siemens/ MDS Legrand/ Hager (L&T)
137.	Moulded Case Circuit Breaker (MCCB)	Siemens/ L&T/ Ge Power/ Group Schneider (MG)NS
138.	Air Circuit Breaker (ACB)	Siemens/ L&T/ Ge Power/ Group Schneider (MG)NW
139.	Earth Leakage Circuit Breaker(ELCB)	MDS Legrand/ Hager (Larsen & Toubro)
140.	Push Button Starter	Siemens/ L&T/Group Schneider (MG)
141.	Auxiliary Relays/ Contactors	Siemens/ L&T/ Group Schneider (MG) France
142.	Line Type Fuse	Siemens/ L&T/GE
143.	Timer	Siemens/ L&T/GE
144.	Terminal Block	Elmax
145.	Voltmeter/ Ammeter (Digital)	Automatic Electric/ L&T/ Siemens / Enercon
146.	Indicating Lamps (LED Type)/ Push Button	Siemens/ L&T/ Vashnio
147.	Single Phase Preventer (Current Base)	L&T/ Minlec
148.	Electronic Digital Meters (A/V/PFHz/KW/KWA) With Led Display	Enercon System Pvt. Ltd/ L&T
149.	Control Transformer/Potential Transformers	Precise/ Gilbert & Maxwell/AE
150.	Current Transformer (Epoxy	Precise/ Gilbert & Maxwell/ AE

	Cast Resin)	
151.	Rubber Mats 1199 V, 6 Mm Thick (ISI Approved)	Jyoti
152.	Weatherproof Boxes (IP55)	Advance/ Adlec/ Milestone
153.	MS Painted Cable Trays	Ricco/ Slotco/ M. M Enterprises

(PART-C) HVAC

TECHNICAL SPECIFICATION AIR-CONDITIONING

Part 1:

1. GENERAL DATA

The system design, basis of design, estimated requirements and other relevant data are outlined in this section. The detailed specifications and specific requirements are outlined in the subsequent sections (Bill of Quantity.)

The work under this tender shall be executed strictly in accordance with constructional and material requirements defined under these specifications.

2. SCOPE OF WORK

The scope comprises supply, installation, testing commissioning of air-conditioning by VRV/VRF/MRV system. The system to facilitate the operation & control of individual room/cabins. The system shall be able to cater the partial load which can be as low as 10% of the total load.

The drain point of each unit shall be connected to the common drain point. ProposedAC system will be microprocessor controlled inclusive of safety factor & gadgets.

The condensing units should be capable of providing cooling within ambient range of -5 degree C to 50 degree C DB & heating is the range of 0 degree C to 15 degree DB.

All expose pipe to be covered with race way or heavy-duty flexible pipe for protection. Special precaution to be taken while, installing of the drain piping. The contractor shall be responsible for any leakage / seepage due to poor installation of HVAC drain tillthe guarantee period. Drain point to be tested for 24 hours after blocking one end. Drain pipingwill be plugged at both ends by appropriate method after completing the drain test to avoid chocking due to foreign material.

3.DRAWINGS/DIMENSIONS

Figured dimension on drawings shall supersede measurements by scale and drawings to a large scale take precedence over these to a smaller scale. Special dimensions or directions in the specifications shall be checked on site. The levels, measurements and other information concerning the existing site, the contractor

shall verify them for himself and also examine the nature of the ground as no claim or allowance whatsoever shall be entertained here after on account of any errors or omissions in the levels or the description of the ground turning out to be different from what was expected or shown on the drawings.

4.CO-ORDINATION OF DRAWINGS

Before commencement of work, the contractor shall correlate all relevant drawings about,

a. Existing physical civil structure, and proposed modifications in physical shapes sizes and dimensions of building elements / openings, objects on this tender, spaces required for HVAC system proposed. Dimensions of site, about beam sizes, beam-bottoms, clear height, window and opening locations, and other civil structures that make space and structure to SITC (Supplying Installation Testing and Commissioning) of HVAC.

b. Site conditions to receives/provides water supply, and drainage of wastewater from HVAC. Intake of fresh air and exit for Air disposal.

c. Existing/ proposed location of electrical establishment, cable tray, wiring, junction boxes, three phase and LV routes, and power sources required to SITC (Supplying Installation Testing and Commissioning) of HVAC.

d. Interior furnishing drawing containing details about false ceiling, furniture, structural, architectural, and service drawings that make space and structure to SITC (Supplying Installation Testing and Commissioning) of HVAC.

e. Contractor shall satisfy himself that the information available there from is complete and unambiguous. Shop drawing are coordinated, from all above installations in the site.

f. Contractor shall prepare shop drawings, such that scope and dimensions are correct to scheme of work in progress. Drawings and dimensions are available to other working persons and teams in this site.

g. Contractor shall mark reference levels/ colour line, with permanent marker markings such that it is readable for workman and supervisors in-charge at site, from HVAC team, also to supervisors from Electrical, and interior furnishing team supervisors. Readable and reference markings, to the supervisor’s form consultant

and owner representatives. Marking on walls and columns to he is using as benchmark levels for measurement installation of machinery.

h. Contractor shall maintain open format drawing and person at site, to incorporate updates from site working conditions. Shall submit such drawing revisions as Drawing R/A Bill 1, 2, 3 and final.

The list of shop drawings shall be as follows:

Detail plans for each area.

Refrigerant piping routes with sections.

Condenser / Evaporative unit location along with the location of MCB.

Electrical panel and control scheme.

Mounting stand & foundation details. (to be designed by structural engineer employed by the contractor and approved by owner).

Any other detailed drawing required for the system.

Drain piping layout with section.

Control cabling detail along with sizes.

Power cable sizes and earthing wire sizes.

Cu pipe support details.

Drain line clamp details.

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

5.B.I.S. CODES OF PRACTICE

Work site shall be carried out incompliance to procedure, material, procedure in compliance to standards prescribed in Bureau of Indian Standards (B.I.S.) or Indian Standards (I.S.) Code of practice, the latest version of the code of practice in usage all the time of construction.

6.INSPECTION:

Routine performance testing of equipment shall be carried out at works in the presence of the representative from owner/consultant-engineer/Architect

7.SUPERVISION

Contractor shall depute their team of engineer for the supervision of installation, testing, commissioning & handling over at site of work.

8.SECURITY

The contractor is responsible for all the equipment's, piping, wiring and all related accessories till the time of handing over to the customer.

9. TEST

The contractor will perform summer or monsoon and winter test and confirm the performance of units as specified in the design data.

10. MAINTANENCE

The contractor will provide sufficient no. of service/ operator team (available 12 hours) along with the service spares during the guarantee (defect) period at site. Capital project Administration / NIREH will provide necessary office space for the service team. Any defects, including drain, arising during warranty period will be attended within 24 hours.

11. CIVIL WORKS

Chasing, cutting and semi-finishing with chicken wire mesh of the brick work or floor for laying the drainpipe and copper pipe to be in contractor scope. Chasing, cutting will be carried out only by chase cutting machine. Chisel and hammer shall not be allowed.

Part 2: TECHNICAL SPECIFICATION

1.0 OUTDOOR UNIT

The outdoor unit shall be factory assembled, weatherproof casing, constructed from heavy gauge mild steel panels and coated with baked enamel finish. The unit should be completely factory wired, tested with all necessary controls tested prior to dispatch conforming to the following specifications.

a) All outdoor units shall consist of inverter scroll compressors.

b) Outdoor units when consisting of more than 1 module (e.g. 22 HP = 10 HP +12 HP), each should have one separate inverter driven compressors.

c) In such case, the units shall be provided with duty cycling arrangement for multiple inverter compressors.

d) The outdoor unit shall be modular in design to facilitate installation one after

another close to each other. Preference would be given to compact units having smaller footprint.

e) Outdoor units should be rugged of anti-corrosion design and should have strong base plate for easy mounting of unit. All interconnecting piping, joints and U bends within the condensing unit shall be painted with two coats of clear transparent polymer coating for protection against corrosion from ambient air pollution.

f) The outdoor unit shall comprise of sub-cooling feature to effectively use the entire coil surface through proper circuit/bridge in order to prevent flushing of refrigerant owing to large length of piping.

g) The condensing unit shall be provided with state-of-the-art microprocessor-based control panel.

h) The outdoor unit shall be provided with provided with Aero spiral design fan exhibiting low noise level characteristics complete with aero fitting grille to facilitate spiral discharge of airflow to effect reduction in pressure losses. The fan should be capable to respond to external static pressure of 5mm.

i) Motor shall be speed controlled to ensure a stable operation for varying ambient, by a factory fitted direct acting head pressure activated variable speed drive for at least 15 steps to give precise discharge pressure and minimum power consumption of condenser fan motor.

j) The condenser shall be complete with provisions for refrigerant piping connections, shut off valves and any other standard accessories necessary with the equipment supplied. The condensing unit shall be designed to facilitate fail safe operation when connected to multiple indoor units. If possible, the system should work on standard operating parameters like discharge pressures of not more than 300 PSI as the ref. Piping will be moving around within a habitable space, protection from any misfortune of any leakage, (leakage is like a bullet on higher pressures). Vendor to comply with all safety codes of high-pressure safety & testing and give 2 sets of special tools to handle such equipment at site. All brazing should be done by only qualified trained person who had training on HIGH PRESSURE brazing, special tools & procedures.

(k) The outdoor unit should be fitted with low noise level and should not be more than 67db (A) at normal operation when measured at 1.5m distance from

floor/ground level.

(L) Indoor supplied shall belong to compatible models across the system, from same generation of technology, from same manufacturer.

2.0 REFRIGERANT CIRCUIT

The refrigerant circuit shall include liquid and gas shut-off valves and a solenoid valve at condenser end. The equipment must have inbuilt refrigerant stabilization control for proper refrigerant distribution. All necessary safety devices shall be provided to ensure the safe operation of the system.

3.0 HEAT EXCHANGER

The heat exchanger shall be constructed with copper tubes mechanically bonded to aluminum fins to form a cross fin coil. The aluminum fins shall be covered by anti-corrosion resin film/paint/treatment. The unit should be with bye-pass/ e-pass heat exchanger to optimize the path of heat exchanger and for better efficiency of condenser.

The unit shall be provided with necessary number of direct driven low noise level propeller type fans arranged for vertical discharge. Each fan shall have a safety guard.

4.0 SAFETY DEVICES

All necessary safety devices shall be provided to ensure safe operation of the system. Following safety devices shall be part of outdoor unit: - high pressure switch, fuse, fan drive overload protector, fusible plug, crankcase heater, over load relay, overload protection for inverter. The outdoor roof mounted units shall be provided in such a fashion that these do not affect the overall aesthetics and ambience of the building. If required these units shall be suitably camouflaged to give good aesthetic look. These provisions, however, shall be discussed, if required, at a later date and the prices for the same shall be worked out separately as extra item. Noise levels for outdoor units shall not be more than 67 db (measured at a point 1 meter in front of the unit at a height of 1.5 meters.

5.0 INDOOR UNITS

All indoor units as specified shall have in general; noise levels less than 46 db. For critical applications noise levels below these limits may, however, be specified during design stage.

i.) Each unit shall have electronic control valve to control refrigerant flow rate respond to load variation of the room.

ii.) The address of the indoor unit shall be set automatically in case of individual and group control.

iii.) In case of centralized control system, it shall be possible to set the address of individual indoor unit through a liquid crystal remote controller.

iv.) The fan shall be dual suction, aerodynamically designed, Turbo, multi blade type, statically & dynamically balanced to ensure low noise and vibration free operation of the system. The fan shall be direct driven type, mounted directly on motor shaft having support from housing.

v.) The cooling coil shall be made out of seamless copper tubes and have continuous aluminium fins. The fins shall be spaced by collars forming an integral part. The tubes shall be staggered in the direction of airflow. The tubes shall be hydraulically/ mechanically expanded for minimum thermal contact resistance with fins. Each coil shall be factory tested at 21 kg/sq.m air pressure under water.

vi.) Indoor unit shall have cleanable type filter fixed to an integrally moulded/moulded plastic frame. The filter shall be slide in and neatly insertable type. It shall be possible to clean the filters either with compressed air or water.

vii.) Each unit shall have computerized PID control for maintaining designed room temperature. Each unit shall be provided with microprocessor thermostat for cooling/ heating.

viii.) Each indoor high wall unit shall be with corded/ cordless remote controller as standard features. Corded/ cordless remote shall have standard features as per standard design of manufacturers.

ix.) The power supply of each indoor unit shall be provided by department.

6.0 HIGH WALL INDOOR TYPE UNIT

The unit shall be high wall mounted type. The unit shall include pre-filters, fan section and DX- coil section. The housing of the unit shall be powder coated/ heat treated galvanized steel. The body shall be light in weight and shall be able to suspend from four comers. The fan shall be aerodynamically designed diffuser turbo fan type. Unit shall have an external attractive panel for supply and return air.

7.0 CENTRALIZED TYPE REMOTE CONTROLLER:

A multifunctional compact centralized controller shall be provided with the system. These controllers shall be capable of controlling all the indoor and outdoor

units and should be capable of integration with the PC based building management system of HVAC. It shall be able to control the indoor units with the following functions:

i) Starting/ stopping of Air Conditioners as a zone or group or individual unit.

ii) Temperature setting for each indoor unit or zone.

iii) Switching between temperature control modes, switching of fan speed and direction of airflow, enabling/disabling of individual remote controller operation.

iv) Monitoring of operation status such as operation mode and temperature setting of individual indoor units, maintenance information and troubleshooting information.

v) Display of air conditioner operation history.

vi) Daily management automation through yearly schedule function with possibility of various schedules. The controller shall have wide screen user friendly and can be wired by a non-polar 2-wire transmission cable to a distance of 1 K.M away from indoor unit. The cables shall be as per prevailing practice adopted by the manufacturers but shall have minimum rating of 2 core, 1.5 sq. mm shielded cables suitable for outdoor application. Cordless/corded remote having star and feature as per standard design of manufacturer IS acceptable to the Department.

8.0 REFERIGERANT PIPING

All refrigerant piping for the air-conditioning system shall be constructed from soft seamless up to 19.1mm and hard drawn copper refrigerant pipes for above 19.1mm with copper fittings and silver soldered joints. The refrigerant piping arrangements shall be in accordance with good practices within the air conditioning industry, and are to include charging connections, suction line insulation and all other items normally forming part of proper refrigerant circuits.

All joints in copper piping shall be sweat joints using low temperature brazing and or silver solder. Before jointing any copper pipe or fitting, its interiors shall be thoroughly cleaned by passing a clean cloth via wire or cable through its entire length. The piping shall be conti9nuously kept clean of dirt etc. while constructing the joints. Subsequently, it shall be thoroughly blown out using nitrogen.

After the refrigerant piping installation has been completed, the refrigerant piping shall be pressure tested using nitrogen at 32 Kg per sq.cm. Pressure shall be maintained in the system for 24 hours. The system shall then be evacuated to minimum vacuum if 700 mm Hg and held for 24 hours. The air-conditioning supplier shall be design sizes and erect proper interconnections of the complete refrigerant circuit.

The suction line pipe size and the liquid line pipe sizes shall be selected according to the manufacturers specified outside diameter. All refrigerant pipe shall be properly supported and anchored to the building structure using steel hangers, anchors, brackets, and supports which shall be fixed to the building structure by means of inserts or expansion shields of adequate size and number to support the load imposed thereon.

9.0 DRAIN PIPING

Shall be UPVC.

The IDU shall be connected to the drainpipe made of rigid heavy duty UPVC, density 10 KG/sq cm min 20 MM dia meter. The pipe under floor should be 20 Kg/sq.cm

The pipe shall be laid in proper slope for efficient draining of the condensate water.

10.PIPE INSULATION

Refrigerant Pipe Insulation:

The whole of the suction and liquid line including all fitting, valves and strainers bodies etc. shall be insulated with 19 MM respectively thick class ‘o’ Electrometric Nitrile Rubber sleeve, as per BOQ.

The joint shall be properly sealed with R242 adhesive of polychloroprene to ensure proper bonding at the ends.

Insulation of cold lines shall be carried out with Armaflex/K-flex insulation sheets and tubes of appropriate thickness so that condensation does not occur.

Drain Pipe Insulation

Drainpipe carrying condensate water shall be insulated with 6 MM thick Kinifoam.

The joint shall be properly sealed with R242 adhesive of polychloroprene to ensure proper bonding at the ends.

For proper drainage of condensate U-trap shall be provided in the drain piping

(wherever required).

All pipe supports shall be of pre-fabricated and pre-painted slotted angle supports properly installed with clamps.

Part 5: TECHNICAL SPECIFICATION

1.0 LIST OF APPROVED MAKES/AGENCIES:

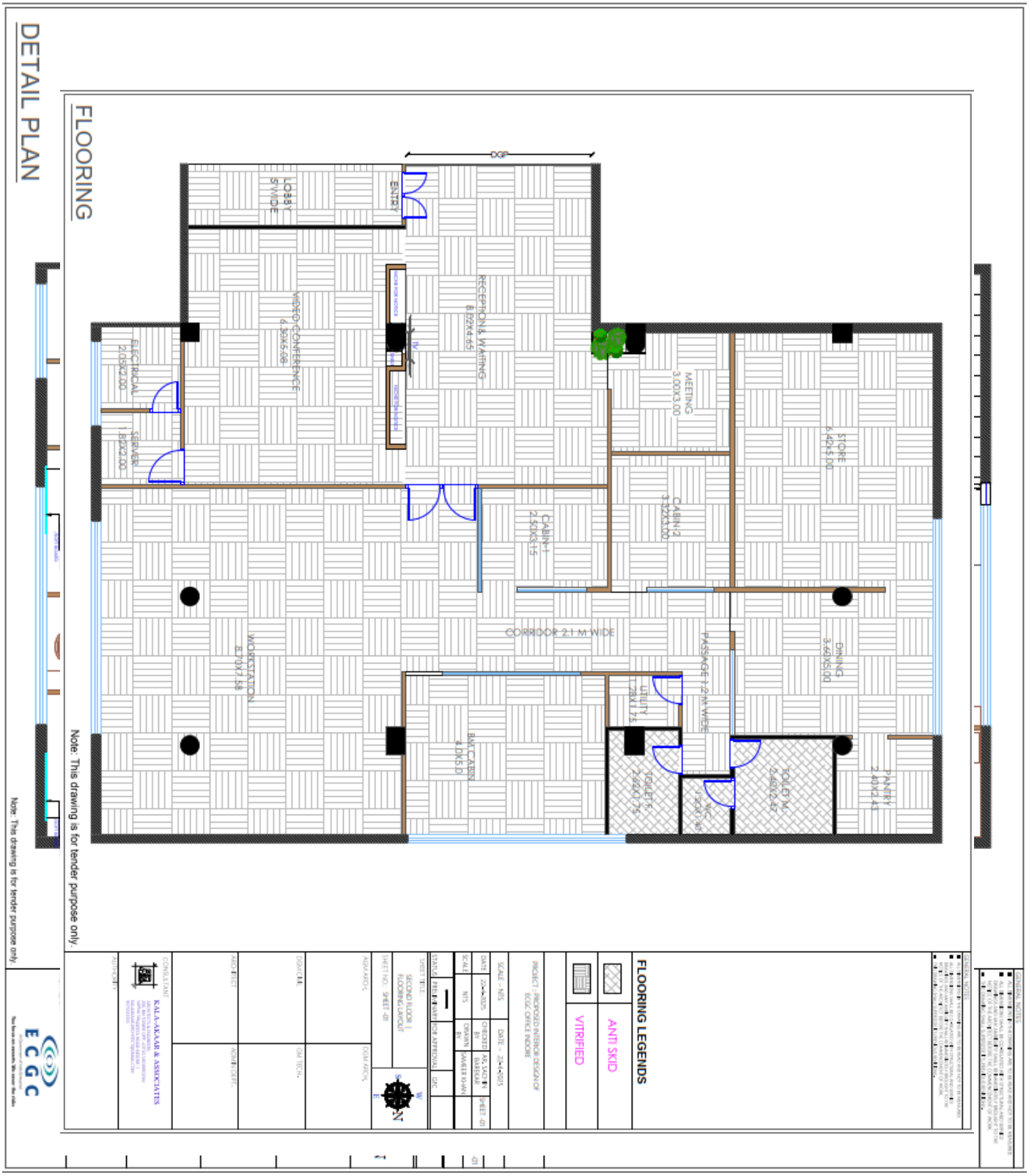
The tenderer shall quote his rates on the basis of the price of the brand/make stipulated in the item of works as described in BOQ, specifications and furnished in technical data. The owner reserves the right to select any of the brands indicated in the "List of Approved Makes/Agencies" in case of delay in delivery of ordered `make of item'. The contractor cannot claim anything extra if the owner changes the make/agencies but within the list of approved make.

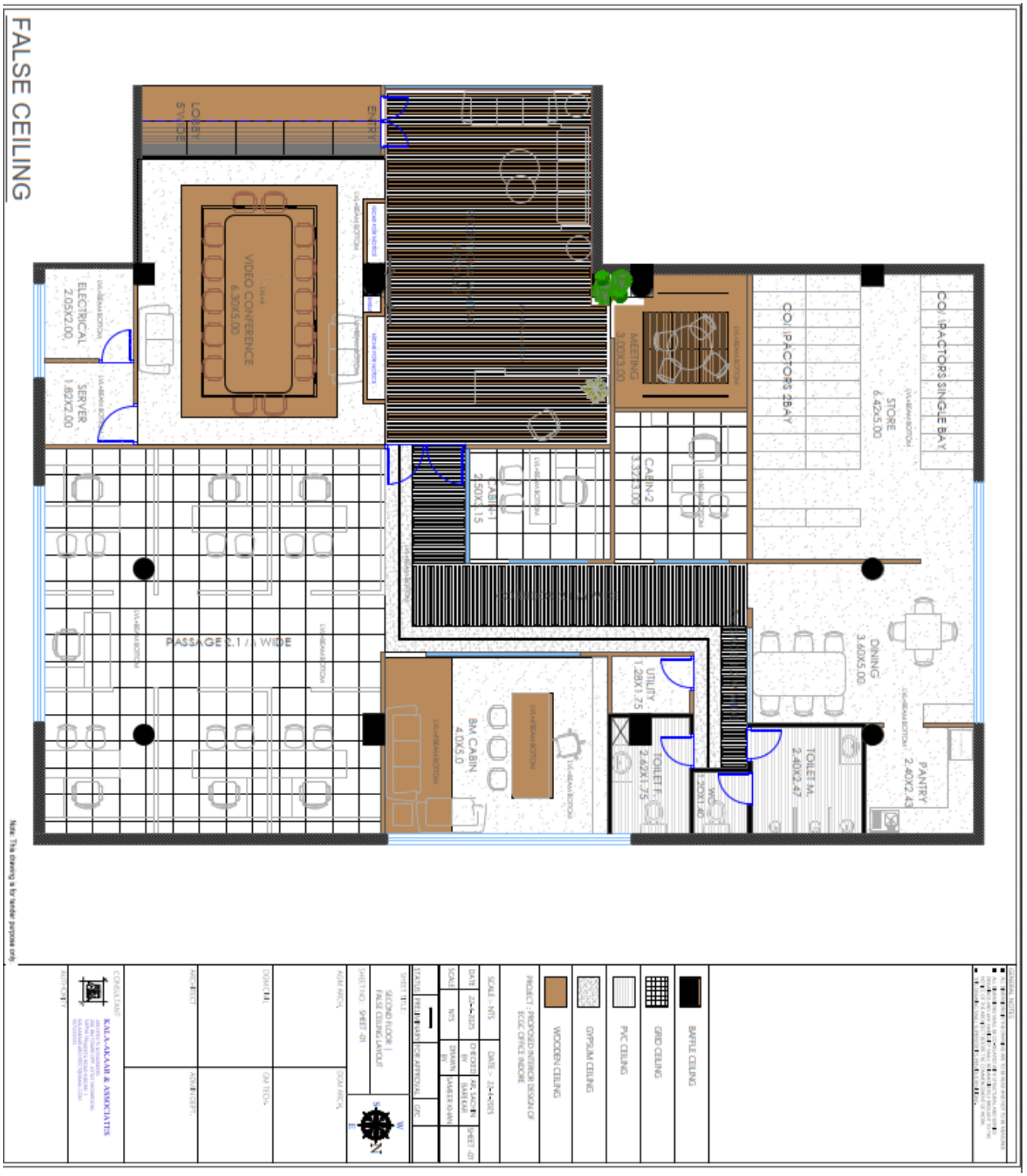
S. No	Description of Item	Approved Makes
1.	**High side Equipment**	
1.1	VRV/VRF/MRV System using compressor of following make only.	Eta Gree /Haier/ Mitsubishi/Daikin
1.2	Y-Joints VRV/ VRF system	Toshiba/Hitachi/ Mitsubishi or equivalent
3.	**Fans**	
3.1	Propeller Fan	Carya ire/ Kruger/ Nuair (UK)/ Nicotra
4.	**Cables & Accessories**	
4.1	Control Cables	Sky tone/ Universal/ Delton/Finolex
4.2	XLPE / PVC Insulated Aluminium Conductor Armored Power Cables	Sky tone/havells/ Universal/RPG Asian/INCAB
4.3	Communication Cable	Fusion/ CommScope / Contempt/Finolex
4.4	Cable Gland Double Compression withEarthing Links	Power/Grip well /Baliga Lighting Ltd.
4.5	PVC Insulated Copper Conductor Stranded Flexible Wires	Finolex/ National Cables – NC/ polycab/ Sky toneHavells
4.6	PVC Conduit & Accessories (ISIApproved)	BEC/ Precision/ D Plast/ Polypack
4.7	MS/ GI Conduit (ISI Approved)	BEC/ AKG/ STEEL KRAFT
4.8	Accessories for MS/GI Conduit (ISIApproved)	Sharma Sales Corporation/ Super SalesCorporation
4.9	Bimettalic Cable Lugs	Hax (Brass copper Alloy India Ltd)/ Dowell's(Biller India Pvt. Ltd.)
4.10	Lugs (Tinned Copper)	Dowell
4.11.	Slotted/Tray	Kelp/Fletco/MM Enterprises.

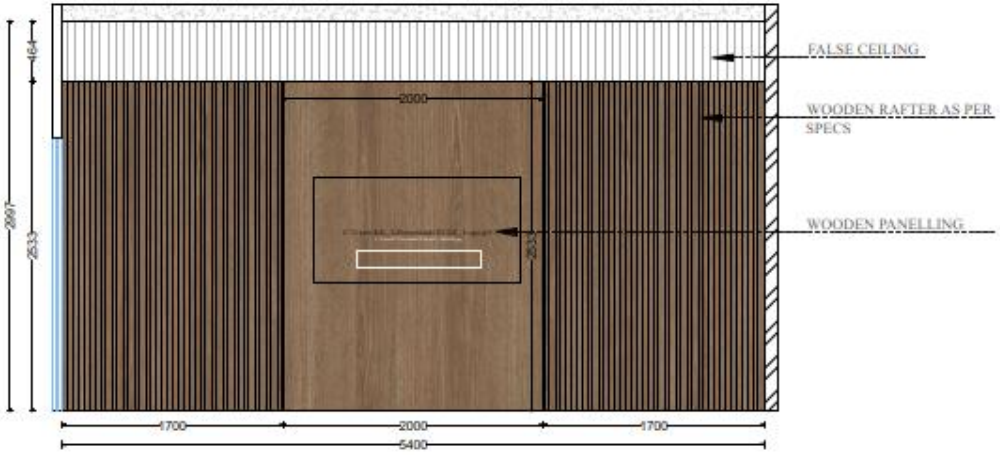
5.	**Pipes & Fittings**	
5.1	UPVC pipe for Darin	AKG/Polypack/supreme
5.2	Cu- Pipes	Totaling /Rajco /Mazflow
7.	**Insulation**	
7.1	Expanded Polystyrene (TF Quality) (Pre-moulded pipe section/slab)	Thermolloyd/ Beard Sell/ Styrene Pakagings/ DEBSProducts/ P R Pakaging/ Coolite/ Indian Pakaging Services
7.2	Cross Linked Polyethylene	Trocellen/Supreme
7.3	Glass Wool	Owens Corning/ U.P. Twinga
7.4	Closed Cell Elastomeric Insulation	Armacell/K-flex/A-flex
7.5	Aluminum Tape	Johnson/ Birla 3M
7.6	Acoustic Lining	UP Twiga/ Lloyd Insulation
7.7	Non-Woven Polyster (Mikron)	Mikron
8.	**Electrical Equipment**	
8.1	Electrical Panel Board/ Motor Control Centre (Power Coated)	Tricolite/ Adlec Systems pvt Ltd./Triton/ System PowerControl
8.2	Electric Motor (TEFC)	Siemens/ Crompton/ Kirloskar/ ABB
8.3	Starters/ Switch gear	Siemens/ L&T/ Group Schneider (MG) France
8.4	Miniature Circuit Breaker (MCB)	Siemens/ MDS Legrand/ Hager (L&T)
8.5	Moulded Case Circuit breaker (MCCB)	Siemens/ L&T/ GE Power/ Group Schneider (MG)NS
8.6	Air Circuit Breaker (ACB)	Siemens/ L&T/ GE Power/ Group Schneider (MG)NW
8.7	Earth leakage circuit Breaker (ELCB)	MDS Legrand/ Hager (Larsen & Toubro)
8.8	Push Button Starter	Siemens/ L&T/Group Schneider (MG)
8.9	Auxiliary Relays/ Contactors	Siemens/ L&T/ Group Schneider (MG) France
8.10	Line Type Fuse	Siemens/ L&T/GE
8.11	Timer	Siemens/ L&T/GE
8.12	Terminal Block	Elmax
8.13	Voltmeter/ Ammeter (Digital)	Automatic Electric/ L&T/ Siemens / Enercon
8.14	Indicating Lamps (LED Type)/Push Button	Siemens/ L&T/ Vashnio
8.15	Single Phase Preventer (Current Base)	L&T/ Minlec
8.16	Electronic Digital Meters (A/V/PF/Hz/KW/KWA) With Led Display	Enercon System Pvt. Ltd/ L&T
8.21	Control Transformer/Potential Transformers	Precise/ Gilbert & Maxwell/AE
8.22	Current Transformer (Epoxy Cast Resin)	Precise/ Gilbert & Maxwell/ AE

8.23	Rubber Mats 1199 V, 6 mm thick (ISI approved)	Jyoti
8.24	Weatherproof Boxes (IP55)	Advance/ Adlec/ Milestone
8.25	MS Painted Cable Trays	Ricco/ Slotco/ M. M Enterprises

DRAWINGS :

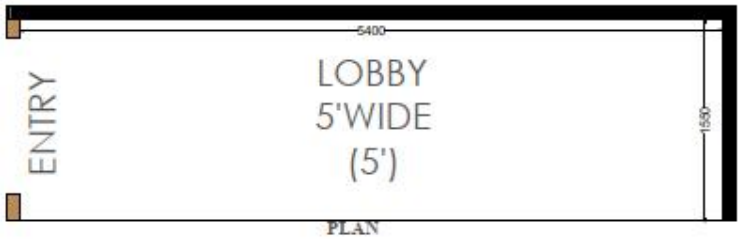

DETAIL PLAN
FLOORING
Note: This drawing is for tender purpose only.
FLOORING LEGENDS
VITRIFIED
ANTI SKID
SECOND FLOOR | FLOORING LAYOUT
KALA-AKAAR & ASSOCIATES
ECGC


FALSE CEILING
LOBBY 5'WIDE
ENTRY
VIDEO CONFERENCE 6.30X5.00
ELECTRICAL 2.05X2.00
SERVER 1.82X2.00
MEETING 3.00X3.00
CABIN-2 3.32X3.00
CABIN-1 2.50X3.15
CONTRACTORS SINGLE BAY
CONTRACTORS 2BAY
STORE 6.42X5.00
DINING 3.60X5.00
PANTRY 2.40X2.43
TOILET M. 2.40X2.47
UTILITY 1.28X1.75
TOILET F. 2.62X1.75
WC 1.20X1.40
BM CABIN 4.0X5.0
PASSAGE 1.1 WIDE
BAFFLE CEILING
GRID CEILING
PVC CEILING
GYPSUM CEILING
WOODEN CEILING
PROJECT : PROPOSED INTERIOR DESIGN OF ECOC OFFICE INDORE
SECOND FLOOR | FALSE CEILING LAYOUT
KAILA-AKAAR & ASSOCIATES

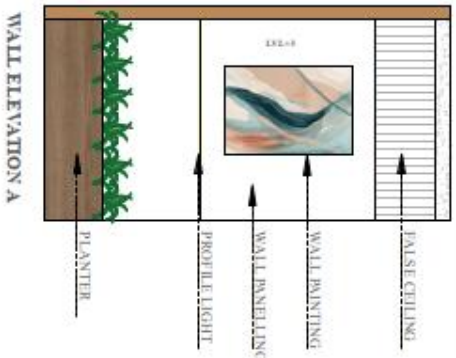


WALL ELEVATION A

ECGC



PLAN



ENTRANCE LOOBY

Note: This drawing is for tender purpose only.

GENERAL NOTES

PROJECT : PROPOSED INTERIOR DESIGN OF ECGC OFFICE INDORE

SCALE :- NTS		DATE :- 14-1-2025	
DATE	14-1-2025	CHECKED BY	AR. SACHIN WAREKAR
SCALE	NTS	DRAWN BY	SAMEER KHAN
STATUS	PRELIMINARY	FOR APPROVAL	GFC

SHEET TITLE :- LOBBY WORKING DRAWING

SHEET NO.:- SHEET -08

AGM ARCH.

DGM ARCH.

DGM CIVIL

DM TECH.

ARCHITECT

ADMIN DEPT.

CONSULTANT

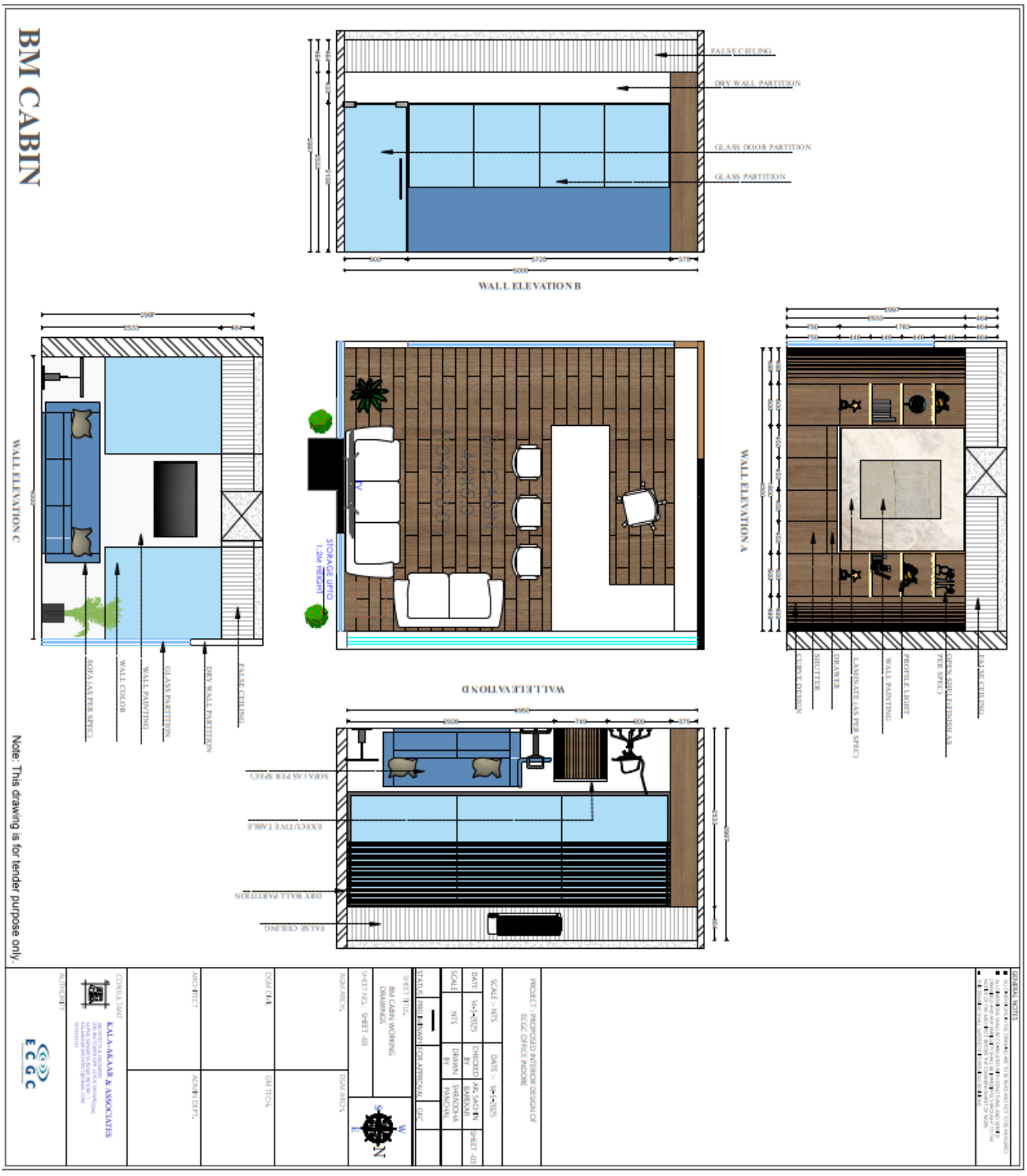
KALA-AKAAR & ASSOCIATES

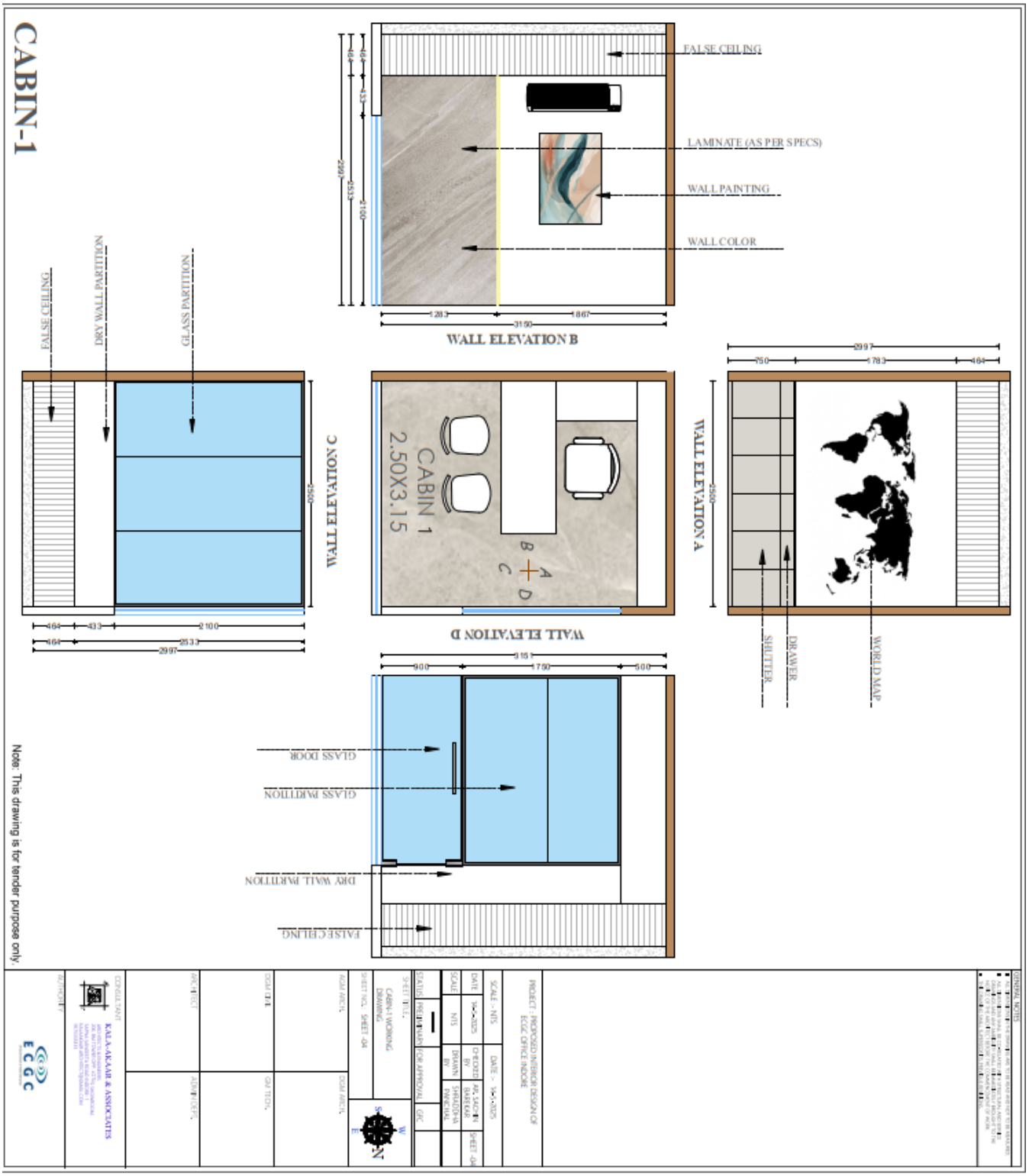
AUTHORITY

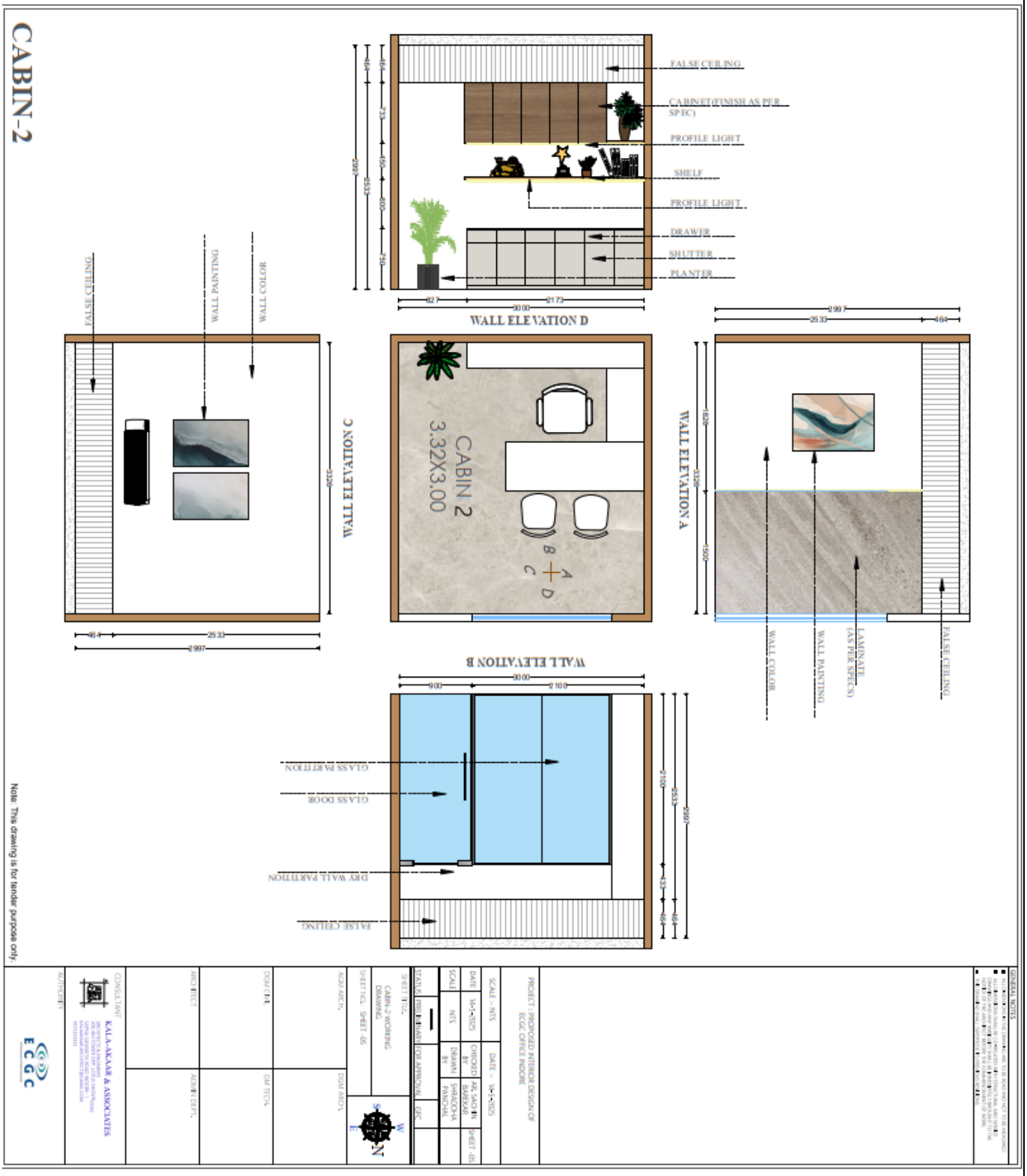
ECGC

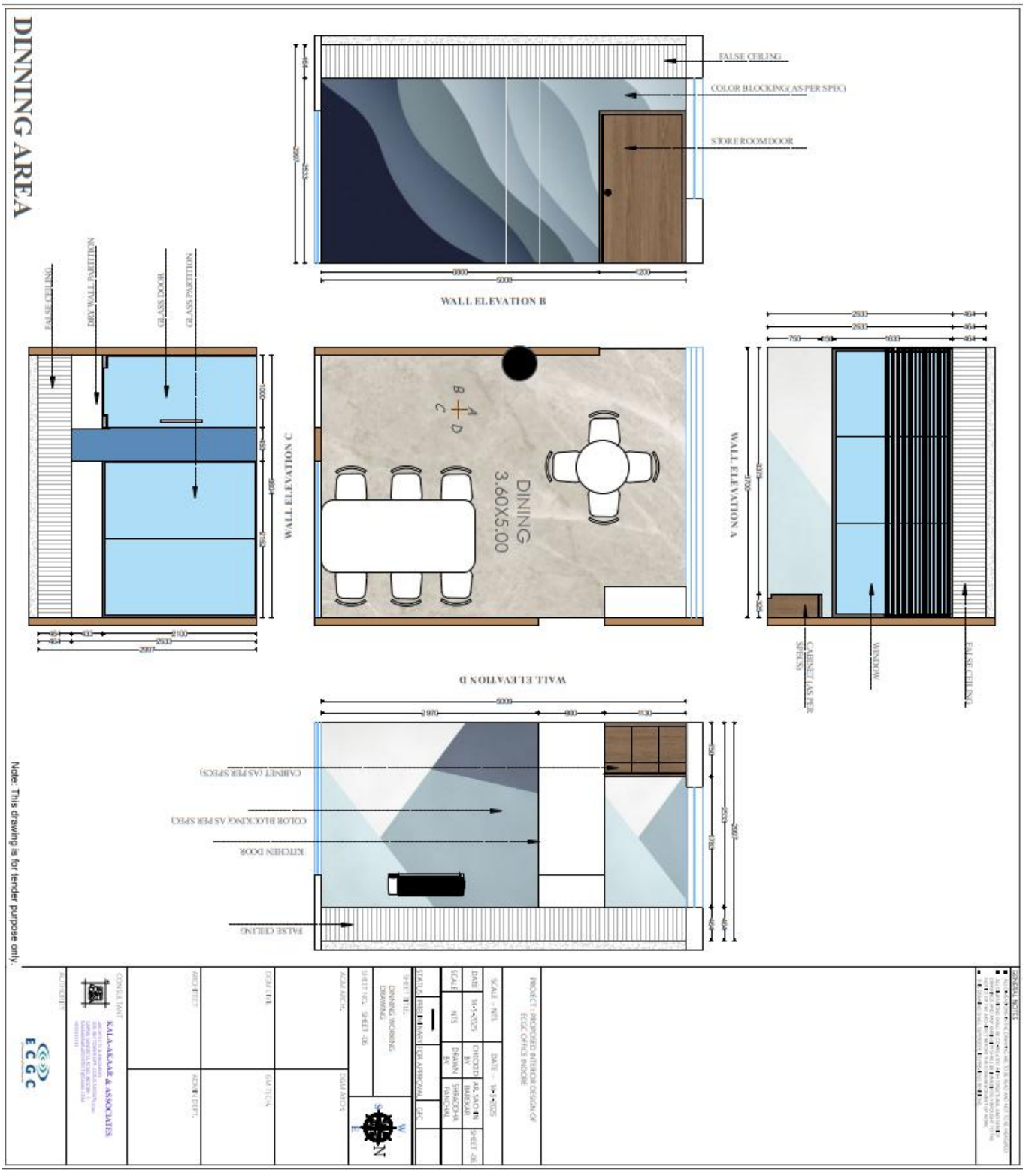

RECEPTION & WAITING
Note: This drawing is for tender purpose only.
WALL ELEVATION B
WALL ELEVATION C
WALL ELEVATION A
WALL ELEVATION D
ENTRY
RECEPTION& WAITING
8.02X4.65
NOTICE BOARD
NOTICE BOARD
NICHE FOR NOTICE
NICHE FOR NOTICE
SHELF
TV
EGGC
ENTRY DOOR
GLASS PARTITION
GLASS DOOR
DRY WALL PARTITION
FALSE CEILING
PROJECT : PROPOSED INTERIOR DESIGN OF EGGC OFFICE INDOOR
SHEET TITLE :
RECEPTION & WAITING WORKING DRAWING
SHEET NO.: SHEET -07
KALA-AKAAR & ASSOCIATES

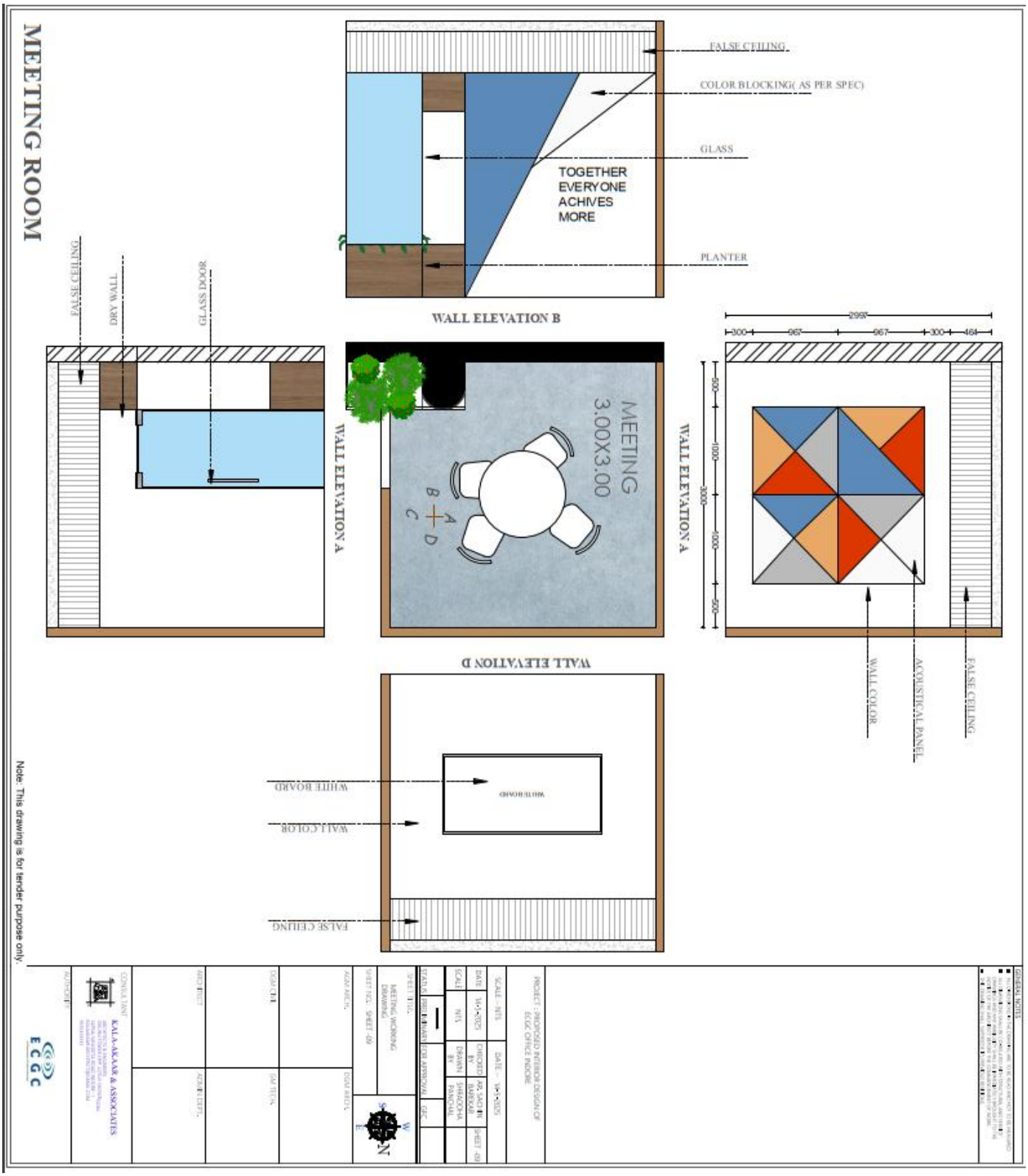

WORKSTATIONS
WALL ELEVATION D
WALL ELEVATION C
WALL ELEVATION A
BACK STORAGE
PASSAGE 2.1 M WIDE
CUBICAL
3.30 X 2.46
Note: This drawing is for tender purpose only.


BM CABIN
FALSE CEILING
DRY WALL PARTITION
GLASS DOOR PARTITION
GLASS PARTITION
WALL ELEVATION B
WALL ELEVATION C
WALL ELEVATION A
WALL ELEVATION D
SOFA (AS PER SPEC)
WALL COLOR
WALL PAINTING
GLASS PARTITION
DRY WALL PARTITION
FALSE CEILING
CURVE DESIGN
SHUTTER
DRAWER
LAMINATE (AS PER SPEC)
WALL PAINTING
PROFILE LIGHT
FALSE CEILING
Note: This drawing is for tender purpose only.
PROJECT : PROPOSED INTERIOR DESIGN OF ECGC OFFICE INDORE
SHEET TITLE : BM CABIN WORKING DRAWINGS
SHEET NO.: SHEET -03
CONSULTANT
KALA-AKAAR & ASSOCIATES
ECGC

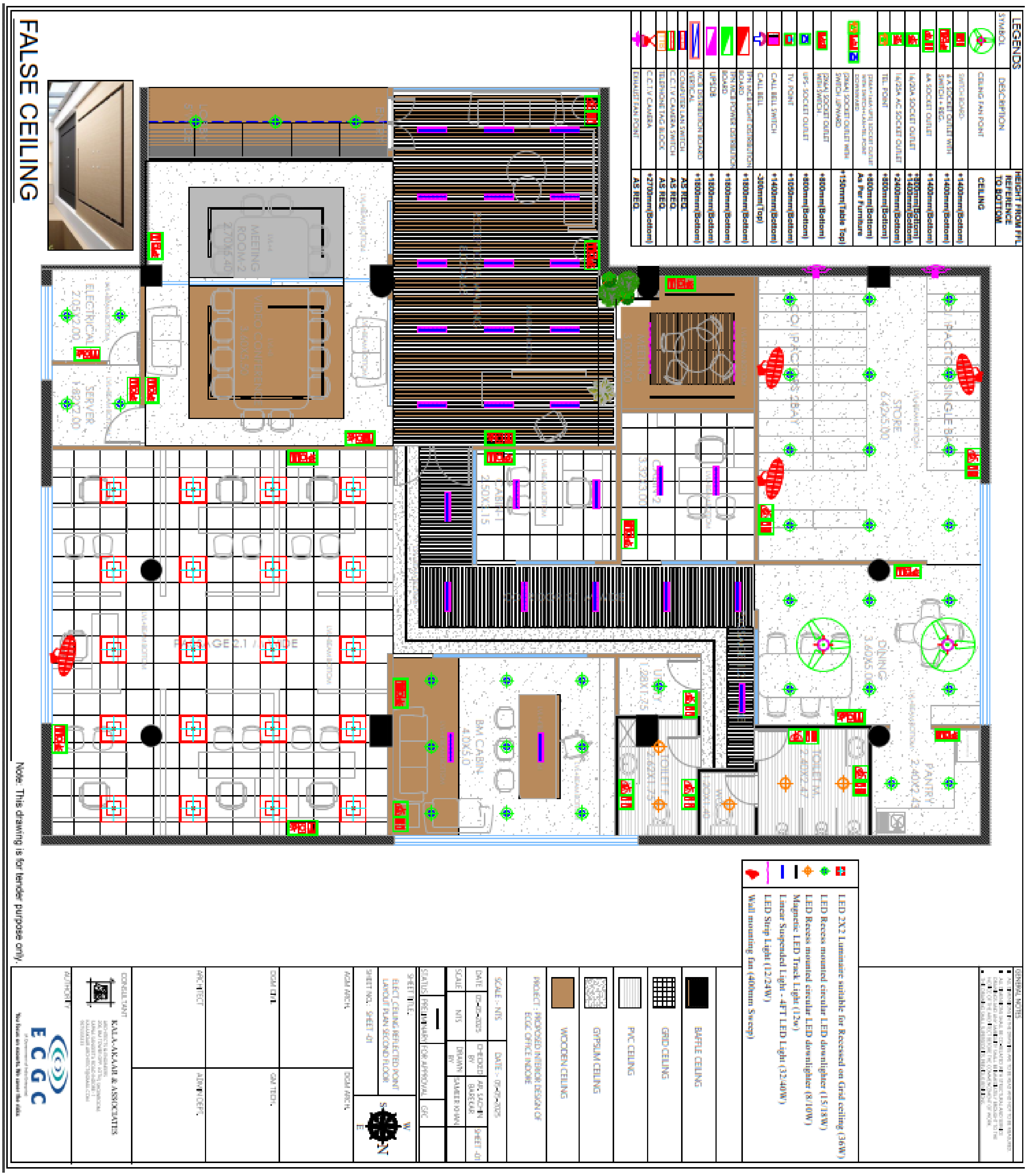

CABIN-1
FALSE CEILING
LAMINATE (AS PER SPECS)
WALL PAINTING
WALL COLOR
WALL ELEVATION B
WALL ELEVATION C
WALL ELEVATION D
WALL ELEVATION A
CABIN 1
2.50X3.15
SHUTTER
DRAWER
WORLD MAP
GLASS DOOR
GLASS PARTITION
DRY WALL PARTITION
FALSE CEILING
Note: This drawing is for tender purpose only

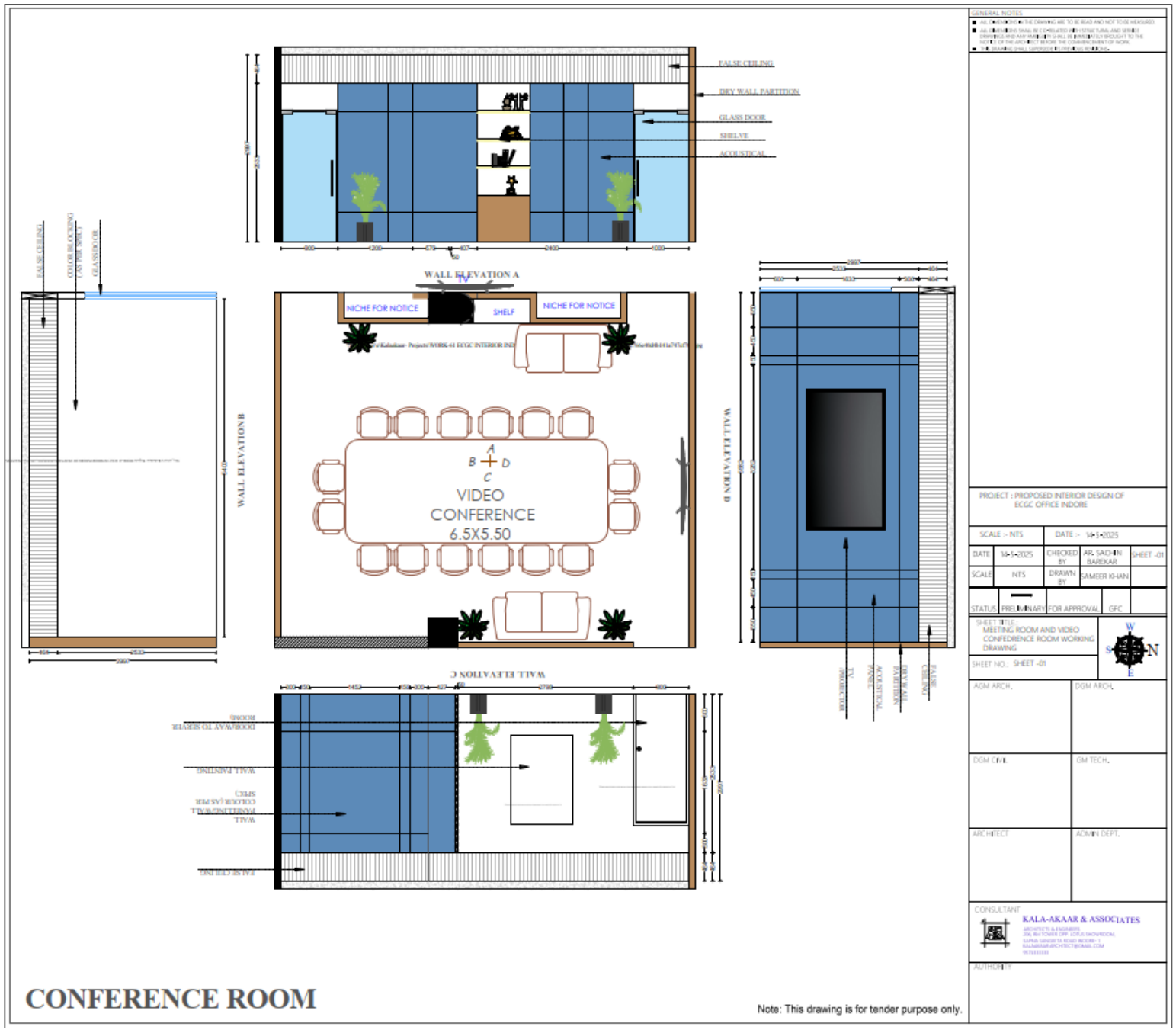

CABIN-2
FALSE CEILING
CABINET (FINISH AS PER SPEC)
PROFILE LIGHT
SHELF
PROFILE LIGHT
DRAWER
SHUTTER
PLANTER
WALL ELEVATION D
CABIN 2
3.32X3.00
WALL ELEVATION C
WALL ELEVATION A
WALL ELEVATION B
WALL COLOR
WALL PAINTING
LAMINATE (AS PER SPECS)
FALSE CEILING
GLASS PARTITION
GLASS DOOR
DRY WALL PARTITION
FALSE CEILING
Note: This drawing is for tender purpose only


DINNING AREA
FALSE CEILING
COLOR BLOCKING(AS PER SPEC)
STORE ROOM DOOR
WALL ELEVATION B
WALL ELEVATION C
DINING
3.60X5.00
WALL ELEVATION A
CABINET (AS PER SPECS)
WINDOW
FALSE CEILING
WALL ELEVATION D
Note: This drawing is for tender purpose only.


MEETING ROOM
FALSE CEILING
COLOR BLOCKING(AS PER SPEC)
GLASS
TOGETHER
EVERYONE
ACHIVES
MORE
PLANTER
WALL ELEVATION B
MEETING
3.00X3.00
WALL ELEVATION A
WALL ELEVATION A
WALL ELEVATION D
WALL COLOR
ACOUSTICAL PANEL
FALSE CEILING
WHITE BOARD
WALL COLOR
FALSE CEILING
Note: This drawing is for tender purpose only.


PANTRY
PANTRY
2.40X2.43
A
B
C
D
WALL ELEVATION A
2400
600
2430
WALL ELEVATION D
2997
2533
464
800
550
617
567
464
750
600
2402
450
600
1647
1733
REFRIGERATOR
SHUTTER
DRAWER
PROFILE LIGHT
MICROWAVE
SHELF
PANELLING
CABINET(FINISH AS PER SPEC)
FALSE CEILING
2430
458
458
458
458
600
SHUTTER
PROFILE LIGHT
SHELF
WALL FINISH(AS PER SPECS)
FALSE CEILING
COFFEE POINT
Note: This drawing is for tender purpose only.
KALA-ARAAR & ASSOCIATES
PROJECT : PROPOSED INTERIOR DESIGN OF ECGC OFFICE INDORE


LEGENDS
SYMBOL
DESCRIPTION
HEIGHT FROM FFL REFERENCE TO BOTTOM
CEILING FAN POINT
CEILING
SWITCH BOARD
+1400mm(Bottom)
6A SOCKET OUTLET WITH SWITCH + REG.
+1400mm(Bottom)
6A SOCKET OUTLET
+1400mm(Bottom)
16/20A SOCKET OUTLET
+800mm(Bottom) +1400mm(Bottom)
16/25A AC SOCKET OUTLET
+2400mm(Bottom)
TEL. POINT
+800mm(Bottom)
+800mm(Bottom) As Per Furniture
+150mm(Table Top)
+800mm(Bottom)
UPS- SOCKET OUTLET
+800mm(Bottom)
TV. POINT
+1050mm(Bottom)
CALL BELL SWITCH
+1400mm(Bottom)
CALL BELL
-300mm(Top)
+1800mm(Bottom)
+1800mm(Bottom)
UPSDB
+1800mm(Bottom)
+1800mm(Bottom)
COMPUTER LAN SWITCH
AS REQ.
C.C.T.V CAMERA SWITCH
AS REQ.
TELEPHONE TAG BLOCK
AS REQ.
C.C.T.V CAMERA
+2700mm(Bottom)
EXHAUST FAN POINT
AS REQ.
PANTRY
2.40X2.43
DINING
3.60X5.00
STORE
6.42x5.00
TOILET M.
TOILET F.
UTILITY
BM CABIN
4.0X5.0
CABIN-1
2.50X3.15
MEETING ROOM-2
2.70X6.40
ELECTRICAL
2.05X2.00
SERVER
1.82X2.00
LED 2X2 Luminaire suitable for Recessed on Grid ceiling (36W)
LED Recess mounted circular LED downlighter (15/18W)
LED Recess mounted circular LED downlighter (8/10W)
Magnetic LED Track Light (12w)
Linear Suspended Light - 4FT LED Light (32/40W)
LED Strip Light (12/24W)
Wall mounting fan (400mm Sweep)
GENERAL NOTES
BAFFLE CEILING
GRID CEILING
PVC CEILING
GYPSUM CEILING
WOODEN CEILING
PROJECT : PROPOSED INTERIOR DESIGN OF ECGC OFFICE INDORE
SCALE :- NTS
DATE :- 05-05-2025
DATE
05-05-2025
CHECKED BY
AR. SACHIN BAREKAR
SHEET -01
SCALE
NTS
DRAWN BY
SAMEER KHAN
STATUS
PRELIMINARY
FOR APPROVAL
GFC
SHEET TITLE:
ELECT_CEILING REFLECTED POINT LAYOUT PLAN SECOND FLOOR
SHEET NO.: SHEET -01
AGM ARCH.
DGM ARCH.
DGM CIVIL
GM TECH.
ARCHITECT
ADMIN DEPT.
CONSULTANT
KALA-AKAAR & ASSOCIATES
AUTHORITY
E C G C
FALSE CEILING
Note: This drawing is for tender purpose only.



CONFERENCE ROOM

Note: This drawing is for tender purpose only.


PLAN
LOBBY
5'WIDE
ENTRY
RECEPTION& WAITING
8.02X4.65
MEETING
ROOM-2
2.78X5.40
VIDEO CONFERENCE
3.40X5.50
ELECTRICAL
2.05X2.00
SERVER
1.80X2.00
CABIN-1
2.50X3.15
CABIN-2
3.32X3.00
MEETING
3.00X3.00
COMPACTORS SINGLE BAY
COMPACTORS 3BAY
STORE
6.42X5.00
CORRIDOR 2.1 M WIDE
PASSAGE 2.1 M WIDE
PASSAGE 1.2 M WIDE
BM CABIN
4.0X5.0
UTILITY
1.28X1.75
TOILET F.
2.62X1.75
TOILET M.
2.40X2.47
DINING
3.60X5.00
PANTRY
2.40X2.43
Note: This drawing is for tender purpose only.
PROJECT : PROPOSED INTERIOR DESIGN OF
ECGC OFFICE INDORE
SCALE :- NTS
DATE :- 22-10-2025
CHECKED BY: ARCHITECT
SHEET -01
DRAWN BY: SAMEER KHAN
SCALE: NTS
DATE: 22-10-2025
STATUS: PRELIMINARY FOR APPROVAL
GFC
SHEET TITLE:
CCTV FLOOR LAYOUT PLAN
CONDUIT LAYOUT PLAN
SHEET NO.: SHEET -03
N
S
W
E
CONSULTANT
KALA-AKSAAR & ASSOCIATES
ARCHITECT
ADMIN DEPT.
ECGC
ECGC Limited


PLAN
LOBBY 5'WIDE
ENTRY
Projector
MEETING ROOM-2 2.78X5.40
VIDEO CONFERENCE 3.40X5.50
RECEPTION& WAITING 8.02X4.65
LDB
PDB
UPSDB
VTPNDB
ELECTRICAL 2.05X2.00
SERVER 1.82X2.00
MEETING 3.00X3.00
CABIN-2 3.32X3.00
CABIN-1 2.50X3.15
COMPACTORS SINGLE BAY
COMPACTORS 2BAY
STORE 6.42X5.00
DINING 3.60X5.00
PANTRY 2.40X2.45
TOILET M. 2.40X2.47
UTILITY 1.28X1.75
TOILET F. 2.62X1.75
BM CABIN 4.0X5.0
CORRIDOR 2.1 M WIDE
PASSAGE 2.1 M WIDE
PASSAGE 1.2 M WIDE
Note: This drawing is for tender purpose only.
GENERAL NOTES
LEGENDS
SYMBOL
DESCRIPTION
HEIGHT FROM FFL REFERENCE TO BOTTOM
CEILING FAN POINT
CEILING
SWITCH BOARD
+1400mm(Bottom)
6 A SOCKET OUTLET WITH SWITCH + REG.
+1400mm(Bottom)
6A SOCKET OUTLET
+1400mm(Bottom)
16/20A SOCKET OUTLET
+600mm(Bottom)
16/25A AC SOCKET OUTLET
+1400mm(Bottom)
TEL POINT
+2400mm(Bottom)
SMART HAIR DRYER SOCKET OUTLET WITH SWITCH+TEL POINT
+600mm(Bottom)
DATA SOCKET OUTLET WITH SWITCH UPWARD
As Per Furniture
+150mm(Table Top)
DATA SOCKET OUTLET WITH SWITCH
+600mm(Bottom)
UPS SOCKET OUTLET
+600mm(Bottom)
TV POINT
+1050mm(Bottom)
CALL BELL SWITCH
+1400mm(Bottom)
CALL BELL
-300mm(Top)
SPN MCB LIGHT DISTRIBUTION BOARD
+1800mm(Bottom)
SPN MCB POWER DISTRIBUTION BOARD
+1800mm(Bottom)
UPSDB
+1800mm(Bottom)
MCB DISTRIBUTION BOARD VERTICAL
+1800mm(Bottom)
COMPUTER LAN SWITCH
AS REQ.
C.C.T.V. CAMERA SWITCH
AS REQ.
TELEPHONE TAG BLOCK
AS REQ.
C.C.T.V. CAMERA
+2700mm(Bottom)
EXHAUST FAN POINT
AS REQ.
PROJECT : PROPOSED INTERIOR DESIGN OF ECGC OFFICE INDORE
SCALE : NTS
DATE : 07-01-2020
DATE : 07-01-2020
CHECKED BY : ARJUN BARSEAR
SHEET -01
SCALE : NTS
DRAWN BY : SAMEER KHAN
STATUS : ISSUED FOR APPROVAL
SHEET TITLE : ELECT_POWER OUTLET LAYOUT PLAN FOR SECOND FLOOR
SHEET INCL : SHEET -02
AGM ARCH.
DGM ARCH.
DGM ELE.
DGM TECH.
ARCHITECT
ADVISE DEPT.
CONSULTANT
KALA-AKAAR & ASSOCIATES
AUTHORITY
ECGC

Name of the Project :-Proposed Interior Furnishing, Civil, MEPF works of ECGC L.T.D. at 2nd Floor of Brilliant Centre, 17, Race Course Rd, Janjeerwala Square, Opp. Basket Ball Complex, New Palasia, Indore, Madhya Pradesh – 452001						
S.NO	**SOR**	**PARTICULARS**	**UNIT**	**QTY**	**RATE**	**AMOUNT**
		Schedule (DSR) Items			**In RS.**	**In RS.**
1	5.3	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost ofcentering, shuttering, finishing and reinforcement with 1:1.5:3 (1 cement: 1.5 coarse sand(zone-lll) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources).	Cum	0.450		
2	4.2	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor etc., up to floor five level, excluding the cost of centering, shuttering and finishing:				
a	4.2.3	1:2:4 (1 Cement : 2 coarse sand (zone-ill) derived from natural sources: 4 graded stone aggregate 20 mm nominal size derived from natural sources)	Cum	0.946		
3	5.22A	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
a	5.22A.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	45.000		
4	5.9	Centering and shuttering including strutting, propping etc. and removal of form for				
b	5.9.21	Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick	Sqm	9.000		

5	6.45	Half brick masonry with non modular fly ash bricks of class designation 10, conforming to IS :12894, in superstructure above plinth upto floor V level.				
a	6.45.2	Cement mortar 1 : 4 (1 cement: 4 coarse sand)	Sqm	81.825		
6	6.15	Extra for providing and placing in position 2 Nos 6 mm dia. M.S. bars at every third course of half brick masonary	Sqm	81.825		
7	13.4	12 mm cement plaster of mix :				
a	13.4.1	1:4 (1 cement: 4 coarse sand)	Sqm	81.825		
8	13.5	15 mm cement plaster on rough side of single or half brick wall of mix:				
a	13.5.1	1:4 (1 cement: 4 coarse sand)	Sqm	81.825		
9	13.80	Providing and applying white cement based putty of average thickness 1 mm. of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	Sqm	690.085		
10	13.48	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :				
a	13.48.1	Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of Special primer applied @ 0.75 Itr /10 sqm	Sqm	690.085		
11	13.45	Finishing walls with textured exterior paint of required shade :				
	13.45.1	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm	Sqm	24.000		
b	13.48.3	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @ 0.80 ltr/10 sqm of approved brand and manufacture	Sqm	9.008		

12	10.1	Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	36.000		
13	10.15	Providing and fixing M.S. Tubular frames for doors, windows, ventilators and cupboard with rectangular/ L-Type sections, made of 1.60 mm thick M.S. Sheet, joints mitred, welded and grinded finish, with profiles of required size, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.				
	10.15.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	Kg	154.500		
14	11.26	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement: 4 coarse sand):				
a	11.26.1	25 mm thick	Sqm	3.600		
15	11.27	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	Sqm	5.760		

16	11.41A	Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.				
a	11.41A.3	Glazed Vitrified tiles Matt/Antiskid finish of size				
iii	11.41A.3.2	Size of Tile 600x1200 mm	Sqm	309.48		
17	11.37	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement: 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	Sqm	75.290		
18	8.2	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement: 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing of edges to give high gloss finish etc. complete at all levels.				
a	8.2.2	Granite stone slab of colour black, Cherry/Ruby red				

i	8.2.2.2	Area of slab over 0.50 sqm	Sqm	9.375		
19	8.3	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.				
a	8.3.2	Granite work	Metre	9.000		
20	8.5	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	Each	3.000		
21	26.45	Supplying and installation of moisture resistant/fire resistant cement board as per standard sizes fixed with self-drilling / taping screws. Screws shall be of counter sunk rib head of 1.60 mm to 4 mm thick or 8 to 10 gauge of length varying from 25 to 45 mm.				
	26.45.1	Cement Fiber Board 6 mm thick as per IS 14862:2000 of type B (High pressure Steam Cured)	Sqm	7.200		
22	22.5	Providing and laying water proofing treatment in sunken portion of WCs. bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : (a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	Sqm	20.890		

23	4.2	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor etc., up to floor five level, excluding the cost of centering, shuttering and finishing:				
a	4.2.8	1:5:10 (1 cement: 5 coarse sand (zone-III) derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources).	Cum	3.783		
24	26.88	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid decorative type flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm2. modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant. WPC to be laminated with PVC foil of minimum 14 microns thick of approved design pasted with hot melt adhesive on both faces of shutter and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid separately)				
a	26.88.2	35 mm thick	Sqm	4.725		

25	26.86	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/Clerestory windows & other Frames/Chowkhat compnstng of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/ wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 750 kg/cum, screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm2. modulus of elasticity 900 N/mm2 and resistance to spread of flame of Class A category with property of being termite,toorer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length complete as per direction of Engtneer-ln-Charge. (M.S hold fast/lugs or SS dash fasteners shall be paid for separately). Note: For WPC solid doorAvindow frames, minus 5 mm tolerance in dimensions i.e depth and width of profile shall be acceptable. Variation in profile dimensions on plus side shall be acceptable but no extra payment on this account shall be made.				
	26.86.5	Frame size 65 x 100 mm	Metre	14.850		
26	9.20	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.				
a	9.20.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	Sqm	5.985		

27	9.88	Providing and fixing chromium plated brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete.	Each	6.000		
28	9.92	Providing and fixing chromium plated brass handles with necessary screws etc. complete:				
a	9.92.1	125 mm	Each	1.000		
29	21.1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285. fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle. Aluminium snap beading for glazing / panelling. C.P. brass 1 stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately):				
a	21.1.1	For fixed portion				
i	21.1.1.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	Kg	6.750		
b	21.1.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)				
i	21.1.2.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	Kg	4.500		

30	21.3	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):				
	21.3.2	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	Sqm	1.125		
31	21.19	Filling the gap in between aluminium/ stone/ wood frame and adjacent RCC/Brick/ Stone/ wood/ Ceramic/ Gypsum work by providing weather/ structural non sag elastomeric PU sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete, complying to ASTM C920. DIN 18540-F & ISO 11600				
	21.19.1	Upto 5 mm depth and 5 mm width	Metre	7.500		
32	17.10	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.l. brackets and stainless steel plug 40 mm. including painting of fittings and brackets, cutting and making good the walls wherever required :				
	17.10.1	Kitchen sink with drain board				
	17.10.1.1	510x1040 mm bowl depth 250 mm	Each	1.000		
33	17.28	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
a	17.28.1	Semi rigid pipe				
	17.28.1.1	32 mm dia	Each	3.000		
	17.28.1.2	40 mm dia	Each	1.000		
b	17.28.2	Flexible pipe				
	17.28.2.1	32 mm dia	Each	3.000		

	17.28.2.2	40 mm dia	Each	1.000		
34	18.21	Providing and fixing uplasticised PVC connection pipe with brass unions :				
a	18.21.1	30 cm length				
	18.21.1.1	15 mm nominal bore	Each	5.000		
	18.21.1.2	20 mm nominal bore	Each	5.000		
b	18.21.2	45 cm length				
	18.21.2.1	15 mm nominal bore	Each	5.000		
	18.21.2.1	20 mm nominal bore	Each	5.000		
35	17.32	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :				
	17.32.1	Circular shape 450 mm dia	Each	2.000		
36	18.48A	Providing and fixing rectangular high density polyethylene water storage loft tank with cover, conforming to ISI : 12701, colour of opaque white or as approved by Engineer-in-charge. The rate includes making necessary holes for inlet, outlet & over flow pipes. The base support Including fittings & fixtures for tank shall be paid separately.	Each	600.000		
37	18.18	Providing and fixing ball valve (brass) of approved quality. High or low pressure, with plastic floats complete :				
	18.18.3	25 mm nominal bore	Each	3.000		
38	18.53A	Providing and fixing C.P. Brass extension nipple (size 15 mm x 50 mm) of approved make and quality as per direction of Engineer-in-charge.	Each	10.000		

39	18.7	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply and all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge..				
		Internal work - Exposed on wall				
a	18.7.3	25 mm nominal dia Pipes	Each	20.000		
b	18.7.4	32 mm nominal dia Pipes	Metre	10.000		
40	18.8	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings and fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.				
		Concealed work, including cutting chases and making good the walls etc.				
	18.8.1	15 mm nominal dia Pipes	Metre	10.000		
	18.8.2	20 mm nominal dia Pipes	Metre	20.000		
	18.8.3	25 mm nominal dia Pipes	Metre	30.000		
	18.8.4	32 mm nominal dia Pipes	Metre	5.000		
41	17.61	Cutting chases in brick masonry walls for following diameter sand cast iron/ centrifugally cast (spun) iron pipes and making good the same with cement concrete 1:3:6 (1 cement: 3 coarse sand :6 graded stone aggregate 12.5 mm nominal size), including necessary plaster and pointing in cement mortar 1:4 (1 cement: 4 coarse sand):				
	17.61.1	100 mm dia	Metre	20.000		
	17.61.2	75 mm dia	Metre	20.000		

	17.61.3	50 mm dia	Metre	65.000		
42	12.41	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				
	12.41.1	75 mm diameter	Metre	20.000		
	12.41.2	110 mm diameter	Metre	20.000		
43	12.42	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.				
a	12.42.1	Coupler				
	12.42.1.1	75 mm	Each	10.000		
	12.42.1.2	110 mm	Each	10.000		
b	12.42.2	Single pushfit Coupler				
	12.42.2.1	75 mm	Each	10.000		
	12.42.2.2	110 mm	Each	10.000		
c	12.42.3	Single tee with door				
	12.42.3.1	75x75x75 mm	Each	5.000		
	12.42.3.2	110x110x110 mm	Each	5.000		
d	12.42.4	Single tee without door				
	12.42.4.1	75x75x75 mm	Each	5.000		
	12.42.4.2	110x110x110 mm	Each	5.000		
e	12.42.5	Bend 87.5°				
	12.42.5.1	75 mm bend	Each	10.000		
	12.42.5.2	110 mm bend	Each	20.000		

f	12.42.6	Shoe (Plain)				
	12.42.6.1	75 mm Shoe	Each	15.000		
	12.42.6.2	110 mm Shoe	Each	30.000		
44	12.43	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement: 4 coarse sand) and making good the wall etc. complete.				
	12.43.1	75 mm	Each	10.000		
	12.43.2	110 mm	Each	10.000		
45	DSR-2023 , DSR NO :9.40	Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete:				
	9.40.1	2nd class teak wood				
	9.40.1.1	50x12 mm	MTR	50		
	9.40.1.2	50x20 mm	MTR	15		
46	DSR-2023 , DSR NO :9.111	Providing and fixing wooden moulded corner beading of triangular shape to the junction of panelling etc. with iron screws, plugs and priming coat on unexposed surface etc. complete 2nd class teak wood.				
	9.111.1	50x50 mm (base and height)	MTR	75		
47	DSR-2023 , DSR NO :9.112	Providing and fixing 2nd class teak wood lipping/ moulded beading or taj beading of size 18X5 mm fixed with wooden adhesive of approved quality and screws/nails on the edges of the Pre-laminated particle board as per direction of Engineer-in-charge.	MTR	55		

48	DSR-2023 , DSR NO :9.127	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.				
	9.127.1	1.5 mm thick	SQM	89.02		
49	DSR-2023 , DSR NO :9.165	Providing and fixing bright /matt finished Stainless Steel handles of approved quality & make with necessary screws etc all complete.				
	9.165.1	125 mm	EACH	40		
50	DSR-2023 , DSR NO :9.166	Providing and fixing 18 mm thick both sides Pre-laminated cement bonded wood particle board as per IS : 15786:2008 of approved brand and shade with suitable full threaded steel screws etc. in partitions, boxes, shelves, racks and cupboard, kitchen cabinet under kitchen counter etc. all complete as per direction of Engineer-in-charge (Note: Fittings to be paid separately).				
	9.166.1	18 mm thick	SQM	38.7377		
51	DSR-2023 , DSR NO :9.167	Providing and fixing 6 mm thick both sides Pre-laminated cement bonded wood particle board as per IS : 15786:2008 of approved brand and shade with suitable full threaded steel screws etc. on the backing of racks, drawer, cupboard, kitchen cabinet under kitchen counter etc. all complete as per direction of Engineer-in-charge.	SQM	21.3765		

52	DSR-2023 , DSR NO :9.168	Providing and fixing cupboard shutter with 19 mm thick one side decorative and other side balancing lamination factory pressed BWP grade marine ply as per IS 710 of approved brand including 2 mm thick PVC edge banding tape with hot glue by edge bending machine etc. with auto closing spring loaded hinges (hydraulic type) etc. complete as per direction of Engineer-in-charge. (Payment of providing and fixing auto closing hinges shall be paid separately)	SQM	17.9565		
53	DSR-2023 , DSR NO :9.171	Providing and fixing stainless steel soft closing spring hinges at 0 degree hinges (hydraulic type) of approved make/brand to cupboard shutters with full threaded steel screws including making necessary recess in board and finished etc. complete as per direction of Engineer-in-charge.	EACH	5		
54	DSR-2023 , DSR NO :9.172	Providing and fixing stainless steel soft closing heavy type telescopic drawer channels of approved make 500 mm long with screws etc. complete as per direction of Engineer- in-charge.	ONE SET	7		
55	DSR-2023 , DSR NO :9.173	Providing and fixing ready made 304 grade stainless steel Modular kitchen basket and accessories such as right angle basket (Plain Cup & Saucer, plant, Partition, Bottle rack, Thali, Cutlery) kitchen utensil basket, Dinner set basket, kitchen grain basket, Multipurpose basket as per site requirement including finishing (wherever required) and fittings. The same shall be fixed with necessary stainless steel nuts & bolts, Stainless Steel screws & telescopic channel etc. as per direction of Engineer-in-charge. (For payment purpose only weight of Stainless steel basket shall be considered excluding weight of all fixing accessories such as nuts, bolts, fasteners telescopic basket channels etc. Payment of providing and fixing telescopic channel shall be paid separately)	KG	25		

56	DSR-2023 , DSR NO :9.174	Providing and fixing 2 mm thick 16 to 19 mm wide PVC edge binding tape of approved quality for cupboard/wardrobe shutters including necessary synthetic resin hot pressed to edges on binding machine etc. complete as per direction of Engineer- in-charge.	MTR	100		
57	DSR-2023 , DSR NO :9.140	Providing and fixing plain lining with necessary screws/nuts & bolts/ nails, including a coat of approved primer on one face, and fixed on wooden /steel frame work, complete as per direction of Engineer-in- charge (Frame work shall be paid for separately).				
	9.140.1	12 mm thick commercial ply conforming to IS : 1328 BWR type	SQM	89.02		

58	DSR-2023 , DSR NO :12.45	Providing and fixing false ceiling at all heights including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm widex 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50 mm long with 6 mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.L channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.L intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.L wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25 mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting.				

	12.45.3	12.5 mm thick tapered edge gypsum moisture resistant board	SQM	104.00		
59	DSR-2023 , DSR NO : 26.27	Providing and fixing mineral fibre false ceiling files at all heights of size 595X595 mm of approved texture, design and pattern. The files should have Humidity Resistance (RH)of 99%. Light Reflectance * 85%. Thermal Conductivity k = 0.052 - 0.057 w/m K. Fire Performance as per (BS 476 pt - 6 &7)in true horizontal level suspended on interlocking T-Gnd of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of mam T runners of 15x32 mm of length 3000 mm. cross T of size 15x32 mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form gnd module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised@80gsm) 50 mm long 8 mm outer diameter M-6 dash fasteners. 6 mm diameter fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm. spaced at 1200 mm centre to centre along main T. The system should rest on periphery walls /partitions with the help of Gl perimeter wall angle of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-secfions used in false ceiling support system shall be pre-painted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge.				
	26.27.1	With 16 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.55 to 0.60)	SQM	84.67		
60	DSR-2023 , DSR NO : 9.90	Providing and fixing special quality chromium plated brass cupboard locks with six levers of approved quality including necessary screws etc. complete.				
	9.90.1	Size 40 mm	each	10		

61	DSR-2023 , DSR NO : 9.92	Providing and fixing chromium plated brass handles with necessary screws etc. complete:				
	9.92.2	100 mm	each	38		
62	DSR-2023 , DSR NO : 9.114	Providing and fixing magnetic catcher of approved quality in cupboard / ward robe shutters, including fixing with necessary screws etc. complete.				
	9.114.1	Triple strip vertical type	each	20		
63	DSR-2023 , DSR NO : 26.10	Providing and fixing factory made Kitchen Cabinet Shutter/Partition 20 mm nominal thickness of approved shade, quality and make, made from rigid foam sheets (Single extruded) having density 600 Kg/cum and laminated on both side by laminate Sheet/PVC foil lamination. The exposed edges shall be sealed with PVC edge beading of same shade and colour. The shutter shall be fire retardent having necessary screw holding capacity. Shutter shall be fixed to frame using approved hinges with necessary stainless steel screws, all complete as per direction of Engineer-m-charge.	SQM	17.406		
64	1.10	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.				
	1.10.3	Group C	Point	88		

65	1.55	Wiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point (without independent switch etc.) with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed PVC conduit, and earthing the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable etc. as required.				
	1.55.3	Group C	Point	4		
66	1.11	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed PVC conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc. as required.	Point	2		
67	1.12	Wiring for light/ power plug with 2X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed PVC conduit alongwith 1 No. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Metre	265		
68	1.13	Wiring for light/ power plug with 4X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed PVC conduit alongwith 2 Nos. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Metre	110		
69	1.14	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed Medium Class PVC conduit as required				
	1.14.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	Metre	196		
	1.14.2	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	Metre	265		
	1.14.3	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	Metre	44		

	1.14.4	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	Metre	10		
	1.14.9	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	Metre	4		
	1.14.10	4x 10 sqmm+ 2x 6 sqmm earth wire	Metre	15		
	1.14.11	4x 16 sqmm+ 2x 6 sqmm earth wire	Metre	10		
70	1.17	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.				
	1.17.1	1 x 1.5 sq. mm	Metre	225		
	1.17.3	3 x 1.5 sq. mm	Metre	75		
	1.17.11	2 x 2.5 sq. mm	Metre	25		
	1.17.12	3 x 2.5 sq. mm	Metre	44		
	1.17.20	2 x 4.0 sq. mm	Metre	32		
	1.17.21	3 x 4.0 sq. mm	Metre	8		
71	1.18	Supplying and drawing following pair 0.5 mm dia FRLS PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required.				
	1.18.1	1 Pair	Metre	286		
	1.18.2	2 Pair	Metre	60		
	1.18.3	3 Pair	Metre	10		
72	1.19	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Metre	65		
73	1.21	Supply & fixing of following sizes of medium class PVC conduit along with accessories in surface / recessed including cutting the wall & making good the same in case of recessed conduit as required.				

	1.21.1	20 mm dia.	Metre	363		
	1.21.2	25 mm dia.	Metre	495		
	1.21.3	32 mm dia.	Metre	74		
74	1.24	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
	1.24.6	Telephone socket outlet	Each	18		
	1.24.7	TV antenna socket outlet	Each	1		
	1.24.8	Bell Push	Each	1		
75	1.25	Supplying and fixing of Stepped type 2 module electronic fan regulator on the existing modular plate & switch box including connections but excluding modular plate etc. as required.	Each	4		
76	1.26	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	5		
77	1.27	Supplying and fixing following size/ modules, Gl box alongwith modular base & cover plate for modular switches in recess etc. as required.				
	1.27.1	1 or 2 Module (75mmX75mm)	Each	26		
	1.27.2	3 Module (100mmX75mm)	Each	1		
78	1.31	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 3 pin 5/6 Amp modular socket outlet and 5/6 A modular switch, connection etc. as required.	Each	44		

79	1.32	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 6 pin 5/6 & 15/16 Amp modular socket outlet and 15/16 A modular switch, connection etc. as required.	Each	18		
80	1.33	Supplying & fixing of 3 pin, 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.	Each	2		
81	1.34	Supplying and fixing brass batten/angle holder including connection etc. as required.	Each	4		
82	1.38	Supplying and fixing call bell/ buzzer suitable for single phase, 230 V, complete as required.	Each	2		
83	1.44	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable etc. as required.	Each	1		
84	1.48	Supplying and fixing extra conduit down rod of 20 cm length G.I. pipe 15 mm dia, heavy gauge including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)	Each	1		
85	1.53	Supplying and drawing of UTP 4 pair CAT 6 LAN Cable in the existing surface/ recessed Steel/ PVC conduit as required.				
	1.53.1	1 run of cable	Metre	774		
	1.53.2	2 run of cable	Metre	175		
	1.53.3	3 run of cable	Metre	31		

86	1.57	Supplying & fixing suitable size GI box wih modular plate and cover in front on surface or in recess including providing and fixing 25 A modular socket outlet and 25 A modular SP MCB, "C" curve including connections, painting etc. as required	Each	2		
87	1.56	Supplying and fixing suitable size Gl box with modular plate and cover in front on surface or in recess, including providng and fixing 2 nos. 3 pin 5/6 A modular socket outlet and 2 nos. 5/6 A modular switch, connections etc. as required. (For light plugs to be used in non residential buildings)	Each	4		
88	2.1	Providing and fixing following capacity TP&N disconnector fuse switch unit inside the existing panel board with ISI marked HRC fuses including drilling holes in cubicle panel, making connections, etc. as required.				
	2.1.1	32 A TP&N	Each	1		
	2.1.2	63 A TP&N	Each	2		
89	2.2	Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.				
	2.2.5	200 A, 25 KA,TP MCCB	Each	1		
	2.2.13	100 A, 30 KA,FP MCCB	Each	1		
	2.2.14	125 A, 36 KA,FP MCCB	Each	1		
90	2.3	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)				

	2.3.3	12 way, Double door	Each	1		
91	2.4	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/ Isolator).				
	2.4.2	6 way (4 + 18), Double door	Each	1		
	2.4.3	8 way (4 + 24), Double door	Each	2		
92	2.5	Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A, tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer) as required. (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
	2.5.2	6 way (4 + 18), Double door	Each	1		
93	2.10	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, “C” curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	2.10.1	Single pole	Each	76		
	2.10.2	Single pole&Nutral	Each	5		
	2.10.3	Double pole	Each	1		
	2.10.4	Triple pole	Each	2		
	2.10.5	Triple pole&Nutral	Each	1		
94	2.11	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	Each	1		

95	2.13	Supplying and fixing following rating, four pole, 415 V, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	2.13.1	40 A	Each	1		
	2.13.2	63 A	Each	2		
	2.13.3	100 A	Each	1		
96	2.14	Supplying and fixing following rating, double pole, (single phase and neutral), 240 V, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	2.14.1	25 A	Each	1		
	2.14.2	40 A	Each	1		
97	2.15	Supplying and fixing following rating, Four pole, (Three phase and neutral), 415 V, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	2.15.2	40 A	Each	1		
	2.15.3	63 A	Each	2		
98	2.16	Supplying and fixing DP sheet steel enclosure on surface / recess along with 25/32 amps 240 volts, "C" curve DP MCB complete with connections, testing and commissioining etc as required.	Each	4		
99	2.17	Supplying and fixing TPN sheet steel enclosure on surface / recess along with 16/25/32 amps 415 volts, "C" curve TPN MCB complete with connections, testing and commissioining etc as required.	Each	1		

100	2.18	Supplying and fixing 20 A, 240 V, SPN Industrial type socket outlet, with 2 pole and earth, metal enclosed plug top alongwith 20 A "C" curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	Each	1		
101	2.19	Supplying and fixing 20 A, 415 V, TPN Industrial type socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 20 A "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	Each	1		
102	2.21	Providing and fixing M.V. danger notice plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	Each	1		
		S/ F powder coated of approved shade GI Cable Trays				
103	4.6	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts etc. as required.				
	4.6.1	100 mm width X 50 mm depth X 1.6 mm thickness	Metre	10		
	4.6.2	150 mm width X 50 mm depth X 1.6 mm thickness	Metre	4		
		S/ F powder coated of approved shade GI Cable Tray Bends				

104	4.7	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray "Bends"(Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts etc. as required.				
	4.7.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	2		
	4.7.2	150 mm width X 50 mm depth X 1.6 mm thickness	Each	2		
		S/ F powder coated of approved shade GI Cable Tray Tee's				
105	4.8	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray "Tee"(Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts etc. as required.				
	4.8.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	2		
	4.8.2	150 mm width X 50 mm depth X 1.6 mm thickness	Each	1		
106	4.10	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray “Reducer” (galvanisation not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required.				
	4.10.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	1		
	4.10.2	150mm width X 50 mm depth X 1.6 mm thickness	Each	1		

107	7.5	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size in the existing RCC/ HUME/ METAL pipe as required.				
	7.5.2	Above 35 sq. mm and up to 95 sq. mm	Metre	35		
108	7.8	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
	7.8.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Metre	20		
	7.8.2	Above 35 sq. mm and up to 95 sq. mm (clamped with 25x3mm MS flat clamp)	Metre	15		
109	7.10	Supplying and fixing cable route marker with 10 cm X 10 cm X 5 mm thick G.l. plate with inscription there on, bolted /welded to 35 mm X 35 mm X 6 mm angle iron, 60 cm long and fixing the same in ground as required.	Metre	1		
110	9.1	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1kV grade as required.				
	9.1.22	3½ X 50 sq. mm (35mm)	Each	4		
	9.1.23	31/4 X 70 sq. mm (38mm)	Each	6		
	9.1.32	4 X 6/10 sq. Mm (25mm)	Each	8		
	9.1.33	4 X 16 sq. mm (28mm)	Each	4		

111	19.1	Supply, Installation, Testing and Commissioning of 1200 mm sweep, BEE 5 star rated, ceiling fan with Brush Less Direct Current (BLDC) Motor, class of insulation: B, 3 nos. blades, 30 cm long down rod, 2 nos. canopies, shackle kit, safety rope, copper winding, Power Factor not less than 0.9, Service Value (CM/M/W) minimum 6.00, Air deliveryminimum 210 Cum/Min , 350 RPM (tolerance as per IS : 374-2019), THD less than 10%, remote or electronic regulator unit for speed control and all remaining accessories including safety pin, nut bolts, washers, temperature rise=75 degree C (max.), insulation resistance more than 2 mega ohm, suitable for 230 V, 50 Hz, single phase AC Supply, earthing etc. complete as required.	Each	4		
112	17.1.1	Supplying, installation, testing & commissioning of heat detector operating at 54ºC/57ºC with rate of rise cum fixed temperature (dual thermistor) type with mounting base complete with all connection etc. as required.	Each	6		
113	17.1.2	Supplying, installation, testing & commissioning of smoke detector with builtin LED and mounting base complete with all connections etc. as required.	Each	32		
114	17.1.4	Supplying, installation, testing & commissioning of manual call box of ABS type in surface/recess with stainless steel chain & hammer assembly complete with glass and push button etc. as required.	Each	2		
115	17.1.5	Supplying, installation, testing & commissioning response indicator on surface/recess MS box having two LEDs metallic cover complete with all connections etc. as required.	Each	38		

116	17.1.6	**Sounder :** Supply, installation, testing and commissioning of fire alarm sounder with facility to make announcement, mounted in MS Box (16 Swg) with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc complete as required.	Each	2		
117	17.1.7	Supplying, installation, testing & commissioning fire alarm sounder with facility to make announcement, mounted in A.B.S. box with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc. complete as required.	Each	1		
118	17.1.8	Supplying, installation, testing & commissioning talk back slave station in surface/recess suitable for operation on simplex mode complete with P.T.T. knob & speaker/microphone enclosed in a M.S.(16 SWG)/ ABS box with break glass in front etc. complete as required.	Each	1		
119	17.1.9	Supplying, installation, testing & commissioning sector panel suitable for following zones, complete with visual indications for short circuit fault, open circuit fault, fire condition and all other standard facilities as per IS:2189 with mimic diagram for all area/zone covered, complete with all connections, interconnections as required.				
	17.1.9.1	4 Zone	Each	1		

120	17.1.10	Supplying, installation, testing & commissioning of main control and indicating panel made out of 16 SWG MS sheet to accommodate the following items duly powder coated in approved colour with louvers for ventilation, locking arrangement, audio and visual indication for fire alarm and public address system, monitoring system including connections, interconnections etc complete as required. 10 Zone panel for fire alarm system 250 Watt amplifier racks suitable for operation on 230V AC/24V DC supply conforming to IEC-268-3 complete with all accessories as required - 2 Nos.(one to act as standby) Talk back master station with LED PTT (press to talk) push button for operation on 230V AC/24 V DC supply conforming to IEC-268 for simplex mode of operation/communication suitable for 20 Nos.talk back unit -1 set. Annoucement control desk suitable for selection of different zones selectively and ON ALL CALL switch with visual indication etc. complete as required -1 set. Amplifier change over switch for inter changing amplifier -1 No. Monitor panel for loudspeaker complete with output selector, ON/OFF switch, fuse, visual indications etc. complete as required- 1 No.Gooseneck microphone with stand and ON/OFF switch- 1 No. Main ON/OFF switch, fuse indication lamps, DC and AC voltmeters & ammeters, terminal blocks etc. complete as required -1 set. Battery charger trickle cum boost to take complete load of fire alarm & PA system complete with all accessories including providing & fixing of 2 nos.12 volt, 60 AH each sealed maintenance free batteries -1 set.	Each	1		
121	17.5	CABLING & WIRING				
	17.5.2	**Fire Alarm Cable :** Supply and laying of 2 x 1.5 sq. mm fire alarm armoured cable, 600/1000V rated with annealed copper conductor having XLPE insulation, steel wire armouring & FRLS outer sheath complete as required.	Mtrs	350		

	17.5.3	Supplying and drawing of cable Fire Retardant PVC insulated copper conductor cable in the existing surface / recessed steel conduit of following pairs, cores and size including connections and interconnections etc. as required.				
	17.5.3.1	speaker cable Single pair, 2-core, 1.5 sqmm	Metre	240		
	17.5.3.2	speaker cable Two pair, 2-core, 1.5 sqmm	Metre	12		
	17.5.4	Supplying and fixing 25 mm dia MS flexible pipe with PVC coating along with all ancillaries and accessories like coupler etc. as required.	Metre	180		
122	17.3.1	**PUBLIC ADDRESS SYSTEM:** Supplying, installation, testing & commissioning of 6 zone, voice alarm controller with USB, MP3 player (including 6 zone button paging station) with seamless integration facility with main fire alarm panel for voice evacuation complete as required.	Each	1		
	17.3.2	Supplying, installation, testing & commissioning of 1.5/3/6W ceiling speaker complete as required.	Each	15		
	17.3.3	Supplying, installation, testing & commissioning of 1.5/3/6 W metal box ceiling/wall speakers complete as required.	Each	2		
	17.3.6	Supplying, installation, testing & commissioning of digital audio amplifier 50 Watt, 25V rms operating at 240 volt AC supply complete	Each	1		

123	18.7	Providing, laying, testing & commissioning of 'C class heavy duty MS pipe conforming to IS 3589/IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required :				
	18.7.1	25 mm dia	Metre	84		
	18.7.2	32 mm dia	Metre	35		
	18.7.3	40 mm dia	Metre	12		
	18.7.4	50 mm dia	Metre	25		
	18.7.5	65 mm dia	Metre	10		
	18.7.6	80 mm dia	Metre	2		
124	18.21	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories:				
	18.21.1	Pendent Sprinkler	Each	32		
	18.21.4	Concealed sprinkler	Each	8		
125		**Supply of Air Cooled Type OUTDOOR UNITS**				
i		The Outdoor / Condensing unit comprising of Variable Speed type **Rotrary / Scroll compressor's**, condenser coil, Variable Speed Condenser fan (Propeller / Axial), High / Low pressure switches, Inter connected Refrigerant Pipings etc.				
ii		Microprocessor based Electrical Control Panel suitable for Indoor and Outdoor (Condnesring) Unit with Controls of Voltage, Current, Phase Indicators, Continous Voltage Scanner, -				
a	DSR 2019/ 1.0	Actual Capacity -20 HP	Nos	1		

126		Supply of INDOOR UNITS				
		-				
a	DSR 2019	DECORATIVE FOUR WAY CASSETTE TYPE SPLIT AIR CONDITIONER WITH GRILLES & ACCESSORIES :				
i	2.7	Actual Capacity -2.8 TR	Nos	3		
b	DSR 2019	DECORATIVE HIGH WALL SPLIT AIR CONDITIONER WITH ACCESSORIES :				
i	3.2	Actual Capacity -0.8 TR	Nos	3		
ii	3.4	Actual Capacity -1.3 TR	Nos	1		
iii	3.6	Actual Capacity -1.65 TR	Nos	2		
iv	3.7	Actual Capacity -2 TR	Nos	2		
B		*PIPING Work :*				
127	DSR 2019/5.0	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogentestingof followingnominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, completewith fittings, with suitable adjustable ring typehanger supports, jointing / brazing including accessories, insulated with XPLE Class-O tubular insulation/with Class-O closed cell elastometric nitrilerubber tubular sleeves sections of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc. as required	RMT			
i	5.1	6.4mmdia (OD) (Softdrawn) with tubethickness 1.2mm with 19mm thick insulation		33.135		
ii	5.2	9.5 mmdia (OD) (Softdrawn) with tubethickness 1.2mm with 19mm thick insulation		32.415		
iii	5.3	12.7 mmdia (OD) (Softdrawn) with tubethickness 1.2mm with 19mm thick insulation		43.785		
iv	5.4	15.86 mmdia (OD) (Softdrawn) with tubethickness 1.2mm with 19mm thick insulation		62.895		

v	5.5	19 mmdia (OD) (harddrawn) with tubethickness 1.2mm with 19mm thick insulation		6.645		
vi	5.6	22.2 mmdia (OD) (harddrawn) with tubethickness 1.2mm with 19mm thick insulation		1.95		
viii	5.8	28.58 mmdia (OD) (harddrawn) with tubethickness 1.2mm with 19mm thick insulation		48.9		
Total cost of DSR Item						
Non Schedule (Non-DSR) Items						
128	MP PWD - 2024, 13.80	Providing and applying Granules homogeneous wall finishing system consisting of a two component system of dry granules (25 kgs/pack) made of 92% silica particles coated with fade resistant pigments and a 100% acrylic Polymer Bonding agent (5 kgs/pack) with the applied thickness of coating as required to be applied in single coat, on a cured. Smooth level plaster surface without keying as per the shades/combinations approved. As per the manufacturers directions for usage, to be applied by approved applicator of manufacturer, as per the directions/supervision of engineers in charge, all complete inclusive of primer on the base.				
	13.80.1	0.8-1.2mm thickness	Sqm	24.000		
129	MP PWD - 2024, 27.8	Providing and fixing stainless steel English (Capital) and Hindi letters in standard pattern bellow type made with 1.20 mm thick stainless steel (ASI Grade-304) Depth of letter shall not be less than 30mm and rate includes welding/soldering of joints polishing, buffing and fixing on the wall, plate and beam surface at any height with necessary nut and bolts/fastener whereveris required complete as per direction of Engineer-in- Charge.	per letter per cm height	120.00		

130	MP-PWD,2024, 9.66	Providing and fixing ISI marked stainless steel tower bolt black finish, (Barrel type) with necessary screws etc. complete :				
a	9.66.1	250x10 mm	Each	6.000		
131	MP-PWD,2024, 9.76	Providing and fixing Stainless steel hanging type floor door stopper with necessary screws, etc. complete.	Each	3.000		
132	MP-PWD,2024, 9.67	Providing and fixing ISI marked 85x42mm stainless steel pull bolt lock with necessary screws bolts, nut and washers etc. complete.	Each	3.000		
133	MP-PWD,2024, 9.65	Providing and fixing ISI marked stainless steel sliding door bolts with nuts and screws etc. complete:				
a	9.65.1	300x16 mm	Each	1.000		
b	9.65.2	250x16 mm	Each	1.000		
134	MP PWD - 2024, 25.3	Providing and fixing white vitreous china European Wall hung Anti germ Fluoro-Polymer Coated water closet of approved shape with soft closing seat cover, and 7.2 litre Low level slim dual flushing, PP (Poly Propylene) made 80 mm thick concealed flushing cistern, flushing capacity3 litre/6 litre, with all fittings and fixtures complete including cutting and making good the wall and floors wherever required.				
	25.3.1	Anti germ Fluoro-Polymer Coated (Nano coating) Wall hung water closet Size 380X520X375 mm with solid poly propelyne made soft closing seat cover (Premium Range)	Each	2.000		

135	MP PWD - 2024, 25.10	Providing and fixing white vitreous china type Anti germ Fluoro-Polymer Coated Wash Basin with 15 mm Table mounted single lever Tall boy basin mixture, (cartridge size 32 mm) 15mm quarter turn angular stop cock, 32 mm C. P. brass made waste coupling length 130mm and 32 mm C. P. Brass Made Bottle Trap size 200x300mm fittings and fixtures complete including Painting of fittings and cutting and making good the wall and floors wherever required.				
	25.10.1	White Vetrious China Anti germ Fluoro-Polymer Coated Wash Basin Size 595x435x185mm with Table mounted single lever Tall boy basin mixture, (cartridge size 32mm.) (Premium Range)	Each	3.000		
136	MP PWD - 2024, 25.12	Providing and fixing white vitreous china Flat Back Anti germ Fluoro-Polymer Coated urinal (Inbuilt spreaders, Inbuilt Bottle trap and inbuilt ceramic Waste coupling) with sensotronic concealed type flushing valve battery & electrical oprated type (9V transformer) for urinal complete set with installation box with control cock complete including painting of fittings and brackets, cutting and making good the wall and floors wherever required .				
	25.12.1	White Vetrious China Anti germ Fluoro-Polymer Coated Urinal Size 340x325x650 mm with sensotronic concealed type flushing valve battery & electrical oprated type (9V transformer) for urinal complete set with installation box with control cock. (Premium Range)	Each	3.000		

137	MP PWD - 2024, 25.16	Providing & Fixing 8mm thick froasted Urinal glass partition size height 900 mm top width 450mm and bottom width 300mm brass made bracket with chrome plating. (Premium Range)	Each	4.000		
138	MP PWD - 2024, 25.18	Providing and fixing in position best Indian (bonut size 24mm, ceramic disc size 19mm and min. body thickness 2mm, nickel plating 0.10 micron and chrome plating 0.3 micron, quarter turn) Pillar cock. (Premium Range)	Each	1.000		
139	MP PWD - 2024, 25.19	Providing and fixing in position best Indian (bonut size 24mm, ceramic disc size 19mm and min. body thickness 2mm, nickel plating 0.10 micron and chrome plating 0.3 micron, quarter turn)Bib cock. (Premium Range)	Each	10.000		
140	MP PWD - 2024, 25.20	Providing and fixing in position best Indian (bonut size 24mm, ceramic disc size 19mm and min. body thickness 2mm, nickel plating. 10 micron and chrome plating 0.3 micron, quarter turn) Angular stop cock. (Premium Range)	Each	10.000		
141	MP PWD - 2024, 25.21	Providing and fixing in position best Indian (bonut size 24mm, ceramic disc size 19mm and min. body thickness 2mm, nickel plating 0.10 micron and chrome plating 0.3 micron, quarter turn) Concealed stop cock. (Premium Range)	Each	10.000		
142	MP PWD - 2024, 25.36	Providing and fixing in position best Indian (bonut size 24mm, ceramic disc size 19mm and min. body thickness 2mm, nickel plating 0.10 micron and chrome plating 0.3 micron, quarter turn) 2- way Bib Cock .(Premium Range)	Each	2.000		

143	MP PWD - 2024, 25.37	Providing and fixing in position best Indian Health Faucet with 8mm dia 1.2 meter long Flexible Tube and wall bracket with N. R. V. (non-return wall).(Premium Range Sanitary Ware)	Each	2.000		
144	MP PWD - 2024, 25.84	Providing and fixing Nuovo dualflow touch-free infrared hand dryer with intelligent LED display, 1850W rated power, DC brushless motor & double HEPA filter Material: ABS Finish: Silver (Premium Range)	Each	2.000		
145	MP PWD - 2024, 25.86	Providing and fixing Paper Towel Dispensers Towels With C /Z Folds - Wall Mounted, Capacity: 400-600 C / Z towels, Material: AISI 304 Stainless Steel, Finish: Satin (Premium Range)	Each	2.000		
146	MP PWD - 2024, 25.87	Providing and fixing Automatic Soap Dispensers, Capacity : 0.8L, Material: Aluminium /ABS, Finish : Chrome/Black (Premium Range)	Each	3.000		
147	MP PWD - 2024, 25.61	Providing and fixing in position best Indian C. P. Brass made (0.3 micron Chrome and 10 micron Nickel plated) W. C. Brush Holder. (Premium Range)	Each	1.000		
148	MP PWD - 2024, 25.52	Providing and fixing in position best Indian C. P. Brass made (0.3 micron Chrome and 10 micron Nickel plated) Single Towel Ring Square. (Premium Range)	Each	3.000		
149	MP PWD - 2024, 17.61	Providing and fixing UPVC trap of self cleaning design complete. Including cost of cutting and making good the wall and floors. 100 mm inlet and 75 mm outlet	Each	8.000		
150	MP PWD - 2024, 17.78	Providing and fixing C.P. brass grating of approved quality and make conforming to IS: specification.				

	17.78.1	100 mm dia.	Each	8.000		
151	MPPWD SOR 2024 - SOR NO.27.26	Internal Glass Film : Designing, Providing, Fixing/ Installation of highly durable decorative translucent vinyl film for interior glass finish. It should come with pressure sensitive, acrylic and permanent adhesive. The dusted crystal film should have thickness of approx. 3.2 mils (81 microns) and frosted crystal film should have thickness of approx. 4.7 mils (120 microns). The liner of the film should be Silicone-coated polyester with thickness of approx. 3.6 mils (90 microns). The film should have adhesion strength of 18N/25mm on glass / polycarbonate / acrylics after 24 hours of application. The tensile strength of dusted crystal film should be 23N/25mm at 23°C and for frosted film tensile strength should be 15N / 25mm at 23°C. When used in interior applications on glass, products should have Class A rating as per ASTM E84 (as defined by NFPA 101 "Life Safety Code"). Dusted and frosted crystal glass finishes should give the uniform appearance with a dusted or frosted sparkle effect and suitable for interior and exterior glass surfaces. The crystal glass finishes should be used only on glass, acrylic, polycarbonate surfaces.This film can be plotter cut in as per customized design. The film should have warranty of 15 years for non-perimeter glass and 5 years for perimeter glass (no warranty will be applicable on printed product).	SQM	75.00		

152	MPPWD SOR 2024 - SOR NO.12.84	Providing & Fixing PVC ceiling system profile panel with click system interlock panel size 4000mmx340mmx1mm resistance to weather perfect finish in wood grain & solid colour maintenance free Resistance to weather truly anti bacterial. with edge profile J-trim on periphery & center profile T-trim in panel joint Complete System to be fixed on G.I. framework of ceiling section at 450 mm distance with enter section suspended by roof by G.I. angle hanger in proper line & level etc complete PRODUCT SPECIFICATIONS: Meets or exceeds the standard specification of (ASTM D-4477) and its referenced documents. Impact resistance: No deformation observed. (Tested at 50 LBS) Tensile strength, MPa: >37.0, Tensile modulus, MPa: >2000 Surface distortion: None at 120F, Squareness: <1/8" of square, Length: Within ¼" of specification, Lock control: Complies, Color Change: <2 grayscales (16 hrs under 1200W/m2 UV radiation at 50 degrees)	SQM	12.55		
153	MPPWD SOR 2024 - SOR NO.12.86	Providing & Fixing Metal Laminate Wooden Finish Baffel Ceiling System consisting of G.I. Metal baffle in laminated wooden finish of size 75mm Depth & 50mm Width with Skin Thickness 0.50 mm. Baffel to be clip on specially designed carrier with cutout arrangement to hold the baffle with spacing 125MM centre to centre. The carrier to be Suspended from roof by 4mm thick G.I. wire hanger with height adjustment clip. Hanger to be fixed on roof by 8 mm thick dash fasteners at spacing 1200 mm centre to centre. The measurement shall be wall to wall without deduction of light & diffuser etc. Baffle system to be suspended in proper line & level as per the satisfaction of Engineer- In- Charge.	SQM	52.50		

154	MPPWD SOR 2024 - SOR NO.9.151	Providing and Installation of acoustic wall panelling consisting of Soak Coard of selected colours as approved by Engineer in charge. Kerf edge Fabric wrapped wood fiber panels of size 600x2400x20mm having density 400Kgs/m3, weight 4- 20kg/m2 installed by using GI strutsystem. The GI strut works includes Cross channel having thickness 0.45mm, length 3600mm, knurled web 50, depth 50mm and equal flanges of 13mm is fastened to Wall positioned horizontally in a regular manner at 600mm centers. PVC Vinyl core UV treated H-Spline having thickness 2mm and length 2400mm to be fixed perpendicular to the Cross channels at 600mm centers. Kerfed edge Fabric wrapped panels shall be then inserted into the H-spline against wall to perfect fit.	SQM	14.12		
155	MPPWD SOR 2024 - SOR NO.9.227	Supplying & Installation of Non-Woven 100% Polyester Fibre Acoustic wall Panels made from polyester short fibre. It is prepared by needle punching on multi folded polyester fabric sheets is lightweight and flexible along with excellent tension/compression stiffness. The panel can be easily cut into any desired shape pattern and V-Grove pattern (arranged by carding process). The final material consists of a three-dimensional network structure with breathable open cells. fixed with Rubber adhesive. Physical Properties 1. Eco-friendly 2. 100% recyclable 3. Moisture proof,Humidity Resistance 4. Flammability tested as per IS 11871 A 5. Thickness 10 mm 6. NRC: High Performance 0.60 to 0.90 7. Density 180-200kg/m3	SQM	3.86		

156	MPPWD SOR 2024 - SOR NO.27.8	Providing and fixing stainless steel English (Capital) and Hindi letters in standard pattern bellow type made with 1.20 mm thick stainless steel (ASI Grade- 304) Depth of letter shall not be less than 30mm and rate includes welding/soldering of joints polishing, buffing and fixing on the wall, plate and beam surface at any height with necessary nut and bolts/fastener whereveris required complete as per direction of Engineer-in- Charge.	per letter per cm height	120.00		
157	(MPPWD CIVIL 2024) 26.3	Providing and fixing **single headed hydrant valve** with nstantaneous female Gun metal couplings ofrequired dia with cast iron wheel ISI marked conforming to IS 5290 (Type -A) with blank gunmetal cap and chain,adopter as required complete as directed by Engineer-in-Charge.				
	26.3.1	63 mm dia	Each	1		
158	(MPPWD CIVIL 2024) 26.6	Providing, fixing, testing and commissioning of **butterfly valve** PN 1.6, with Bronze/Gunmetal seat duly ISI marked complete with Nuts, Bolts, washers, gaskets, confirming to IS 13095, of following sizes as required.				
	26.6.3	100 mm dia	Each	1		
159	(MPPWD CIVIL 2024) 26.8	Providing, installation, testing and commissioning of **dual plate non-return valve** of following sizes confirming to IS 5312 complete with rubber gasket, GI bolts, nuts, washers etc. as required.				
	26.8.3	100 mm dia	Each	1		
160	(MPPWD CIVIL 2024) 26.9	Providing, installation, testing and commissioning **stainless steel strainer** fabricated out of 1.6 mm thick stainless steel sheet with 3 mm dia holes with stainless steel flange.				
	26.9.2	100 mm dia	Each	1		

161	(MPPWD CIVIL 2024) 26.11	Supplying and fixing dia,15m long, **RRL hose pipe** with following diamale and female gun metal couplings duly binded with GI wire, rivets etc. confirming to IS 636 (type-A)as required.				
	26.11.2	63 mm dia	Each	2		
162	(MPPWD CIVIL 2024) 26.12	Providing and fixing **first -Aid hosereel** with MS construction spray painted in post office red, confirming to IS 884 with up to date amendments,complete with the following asrequired.) (a) 30-36m long 20mm (nominal internal) dia water hose thermoplastic (textile reinforced) type -2 as per IS 12585 (b) 20mm (nominal internal) dia gun metal globe valve and nozzle. (c) Drum and brakets for fixing the equipments on wall. (d) Connections from riser with 40 mm dia stop valve (gun metal) and M.S. pipe	Each	2		
163	(MPPWD CIVIL 2024) 26.15	Providing and fixing **63mm gun metal branch pipe** with 20mm (nominal internal diameter)size gun metal nozzle conforming to IS 903, suitable for instantaneous connection, to interconnect hose pipe coupling as required.	Each	2		
164	(MPPWD CIVIL 2024) 26.17	Providing and fixing **2 way fire brigade** connection (FBC) of CI body with2 nos. gun metal male instantaneous inlet couplings complete with cap and chain as required. For 150mm dia MS pipe connection, confirming to IS 904 as required.	Each	1		

165	(MPPWD CIVIL 2024) 26.18	Providing and fixing **air vessel** made of 250mm dia, 8mm thick MS sheet, 1200mm in height with air release valve on top and flanged connection to riser, drain arrangement with 25 mm dia Gunmetal wheel valve, with required accessories, pressure guage and painting with synthetic enamel paint of approved shade as required .	Each	1		
166	(MPPWD ELECTRIC AL 2024) 50.8	**Internal hooter:** Providing &fixing of internal hooter with working AC Voltage 220V A.C./24V D.C. current consumption, sound output 120 DB, material M.S. sheet.	Each	2		
167	(MPPWD CIVIL 2024)	**Carbon-di-oxide type fire extinguishers :**Providing and fixing of carbon-dioxide type fire extinguishers consisting of welded M.S.cylindrical body, squeeze lever discharge valve fitted with pressure indicating gauge internal discharge tube 30 cm long high pressure discharge hose, discharge nozzle, suspension bracket conforming to IS : 15683 finished externally with red enamel paint and fixed to wall with brackets complete with internal charge.				
	26.27.3	Capacity 4.5 kg	Each	1		
168	(MPPWD CIVIL 2024)	**ABC Power type fire extinguishers :** Providing and fixing of ABC Power type fire extinguishers consisting of welded M.S. cylindrical body, squeeze lever discharge valve fitted with pressure indicating gauge internal discharge tube 30 cm long high pressure discharge hose, discharge nozzle, suspension bracket. Conforming to IS: 15683 finished externally with red enamel paint fixed to wall with brackets complete with internal charge.				
	26.28.4	Capacity 6.0 kg	Each	1		

169	(MPPWD ELECTRICAL 2024) 39.23	**Pressure gauges :** Supplying &installation of pressure gauges with15 mm dia brass check nut & capable of showing pressure reading from 0. to 30 kg.	Each	2		
170	(MPPWD CIVIL 2024) 26.14	**Hose cabinet 700x600x250mm : (For Internal Hydrant)** Providing and fixing hose cabinet of size 900x600x500mm made of 2 mm thick MS sheet with 4 mm thick float glass doors in front painted "FIRE" in red paint i/c necessary locking arrangement suitable to accommodate external hydrant with butterfly valve 2 nos. 15m Long hose pipe, 1 no branch pipe mounted on wall or raised brick platform& duly painted with post office red externally and white internally with synthetic enamel paint complete in all respects for external hydrant, as directed by Engineer-in Charge.	Each	1		
171	(MPPWD CIVIL 2024)	**Gun metal valves :** Providing, installation, testing and commissioning of gun metal valves of following sizes as required.				
	26.10.5	25 mm dia	Each	2		
172	(MPPWD ELECT 2024) 31.3	Supply and fixing Led tube rod comprising of LED tube with non-integral/integral driver, upto 6500K color temp having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with system efficacy> 100 lm/Watt. LED driver PF> 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 79-08/IS16106 (2012), IEC60598, IEC61347i/c connection wire, testing etc. to complete the job.				
	31.3.4	Tube light LED 1 X 20/22Watt, Integral i/c batten aluminium body, PC diffuser.	Each	2		

173	(MPPWD ELECT 2024) 31.4	Supply and fixing of recessed mounting type Led light fixture, LED of 1 to 3 Watt each assembled on single MCPCB, having color temp upto 6500K & having 50000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy>100 lm/Watt. LED driver PF> 0.95, THD < 20% & surge protection 4KV. The colour rendering index of LED light should be more than 70. Housing made of CRCA powder coated frame with glare free diffused polycarbonate cover. Submission LM 79-08/IS16106 (2012), IEC60598, IEC61347i/c connection wire, testing etc. to complete the job.				
	31.4.1	LED luminiare 2' X 2', 36Watt, color temp 3000-6500k as required.	Each	12		
174	(MPPWD ELECT 2024) 31.5	Supply and fixing of surface mounting type LED light fixture, LED of 1 to 3 Watt each assembled on single MCPCB, having color temp upto 6500K & having 50000 burning hrs. life with minimum @ L 70, system lumen output should be minimum with efficacy>100 lm/Watt. LED driver, PF> 0.95, THD < 20% & surge protection 4KV. The colour rendering index of LED light should be more than 70. Housing made of CRCA powder coated frame with glare free diffused polycarbonate cover. Submission LM 79-08/IS16106 (2012), IEC60598, IEC61347i/c connection wire, testing etc. to complete the job.				
	31.5.1	LED luminiare 2' X 2', 36Watt, color temp 3000-6500k as required.	Each	2		

175	(MPPWD ELECT 2024) 31.6	Supply and fixing recessed mounting LED down lighter, LED of 1 to 3 Watt each assembled on single MCPCB, having color temp upto 6500K & having 50000 burning hrs. life with minimum @ L 70, system lumen output should be minimum with efficacy>100 lm/Watt. LED driver PF > 0.95, THD < 20% & surge protection 4KV. The colour rendering index of LED light should be more than 70. Housing made of pressure die cast aluminium/CRCA powder coated frame with glare free diffused polycarbonate cover. Submission LM 79-08/IS16106 (2012), IEC60598, IEC61347i/c connection wire, testing etc. to complete the job..				
	31.6.3	7/8/10 Watt, color temp 3000-6500k as required.	Each	4		
	31.6.4	12 Watt, color temp 3000-6500k as required.	Each	2		
	31.6.5	14/15 Watt, color temp 3000-6500k as required.	Each	10		
176	(MPPWD ELECT 2024) 31.7	Supply and fixing surface mounting LED down lighter, LED of 1 to 3Watt each assembled on single MCPCB, having color temp upto 6500K & having 50000 burning hrs. life with minimum @ L 70, system lumen output should be minimum with efficacy>100 lm/Watt. LED driver PF > 0.95, THD < 20% & surge protection 4KV. The colour rendering index of LED light should be more than 70. Housing made of pressure die cast aluminium/CRCA powder coated frame with glare free diffused polycarbonate cover. Submission LM 79-08/IS16106 (2012), IEC60598, IEC61347i/c connection wire, testing etc. to complete the job..				
	31.7.3	7/8/10 Watt, color temp 3000-6500k as required.	Each	1		
	31.7.4	14/15 Watt, color temp 3000-6500k as required.	Each	1		

177	(MPPWD ELECT 2024) 31.8	Supply and fixing of recessed mounting LED swivel type COB downlighter, having color temp upto 6500K & having 20000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy>80lm/W. LED driver PF > 0.9, THD < 20% & surge protection 5KV. The colour rendering index of LED light should be more than 70. Housing made of pressure die cast aluminium / CRCA powder coated frame with glare free diffused polycorbonate cover. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer manadatory. i/c connection wire, testing etc. to complete the job. Guarantee as per tender agreement condition.				
	31.8.3	9W COB LIGHT	Each	1		
	31.8.4	12/15W COB LIGHT	Each	4		
	31.8.6	22/24W COB LIGHT	Each	4		
178	(MPPWD ELECT 2024) 31.9	Supply and fixing of Linear profile suspended LED lumanaire, having color temp upto 6500K & having 20000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy>80lm/W. LED driver PF > 0.9, THD < 20% & surge protection 5KV. The colour rendering index of LED light should be more than 80. Housing made of pressure die cast aluminium / CRCApowder coated frame with high transmission diffuser. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer manadatory. i/c mounting arrangment, connection wire, testing etc. to complete the job. Guarantee as per tender agreement condition.				
	31.9.1	32/40W	Each	5		

179	(MPPWD ELECT 2024) 31.10	Supply and fixing of Linear profile recessed LED light lumanaire, having color temp upto 6500K & having 20000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy>80lm/W. LED driver PF > 0.9, THD < 20% & surge protection 5KV. The colour rendering index of LED light should be more than 80. Housing made of pressure die cast aluminium / CRCA powder coated frame with high transmission diffuser. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer manadatory. i/c mounting arrangment, connection wire, testing etc. to complete the job. Guarantee as per tender agreement condition.				
	31.10.1	32/40W	Each	5		
	31.10.2	72/80W	Each	1		
180	(MPPWD ELECT 2024) 31.17	Supplying, fixing & testing of approved make flexible LED strip comprising of 60 LED per meter W/O driver for direct mounting complete with all accessories including connection lead, fixing, connection as required. Submission LM 79-08/IS16106 (2012), IEC60598, IEC61347i/c connection wire, testing etc. to complete the job.				
	31.17.1	Flexible LED strip 24Watt/25Watt - 5 M indoor cove light W/O Driver IP 20 -33	Each	2		
	31.17.2	Flexible LED strip 72Watt/75Watt - 5 M indoor light W/O driver IP 20 - 33	Each	1		
181	(MPPWD ELECT 2024) 31.18	Supplying, fixing & testing of approved make Power supply for LED strip				
	31.18.1	Power supply 25Watt/30Watt for LED strip IP25/IP33	Each	1		
	31.18.2	Power supply 48Watt for LED strip IP33	Each	1		

182	(MPPWD ELECT 2024) 31.19	Supplying, fixing and testing of approved make LED bulkhead ABS body, PC diffuser including fixing on wall as required, with necessary material complete				
	31.19.1	6W IP 54	Each	2		
183	(MPPWD ELECT 2024) 30.6	Supplying, erecting and testing of approved make exhaust fan heavy duty with mounting frame, blades AC 230-250 complete connection and including, frame bolt/anchor hole fasteners etc. complete finished and as required.				
	30.6.1	300mm sweep RPM 900 / 1400	Each	2		
184	(MPPWD ELECT 2024) 38.4	Supply, installation testing and commissioning of telephone tag block krone connector with enclosure complete as mentioned below :-				
	38.4.1	10 Pair	Each	2		
185	(MPPWD ELECT 2024) 38.9	Supply, installation testing and commissioning RJ - 45 computer jack cat 6 with shutter modular (1Module)				
	38.9.1	RJ - 45 computer socket cat 6 with shutter modular (1Module)	Each	15		
	38.9.2	RJ - 45 computer socket cat 6 tool less connection (1Module)	Each	4		
186	(MPPWD ELECT 2024) 38.10	Supply, installation testing and commissioning RJ - 45 computer jack cat 6 with shutter modular (2Module)	Each	15		
187	(MPPWD ELECT 2024) 38.13	Supply, installation testing and commissioning of patch cord as mentioned below :-				
	38.13.1	CAT 6 RJ45 patch cord UTP 1 metre	Each	10		
	38.13.2	CAT 6 RJ45 patch cord UTP 2 metre	Each	4		

	38.13.3	CAT 6 RJ45 patch cord UTP 3 metre	Each	1		
188	(MPPWD ELECT 2024) 38.14	Supply, installation testing and commissioning of High-Speed HDMI corrosion-resistant connector & braided cable, Supports Ethernet, 3D, 4K video, computers and other HDMI-enabled devices Black as required to complete the job as mentioned below :-				
	38.14.1	1 Metre, HDMI cord	Each	3		
	38.14.2	2 Metre, HDMI cord	Each	3		
	38.14.3	5 Metre, HDMI cord	each	4		
	38.14.4	10 Metre, HDMI cord	Each	1		
189	(MPPWD ELECT 2024) 38.15	Supply, installation testing and commissioning of 19" modular patch - 1 U patch panel 24, RJ 45 cat-6 connector	Each	2		
190	(MPPWD ELECT 2024) 38.16	Supply, installation testing and commissioning of 19" modular telephone patch panel 24 - 1 U with RJ 11 connector	Each	1		
191	(MPPWD ELECT 2024) 38.17	Supply, installation testing and commissioning of wall mounting rack, for computer switches/Patch Panel etc complete as mentioned below :-				
	38.17.1	6U cabinet with min. Dimensions 366X600X600, wall mounting with 6 point 5 Amp. socket power supply strip, and fan, cable manager, tray as per Site requirement	Each	1		
	38.17.3	12U cabinet with min. Dimension 590X600X600, wall mounting with 6 point 5 Amp. socket power supply strip, and fan, cable manager, tray as per Site requirement	Each	2		

192	(MPPWD ELECT 2024) 40.1	Supply, installation, testing and commissioning of G.I. floor raceway of mention below sizes 1/3 compartments including all necessary civil works.				
	40.1.1	75 x 38 x 1.2 mm	Metre	10		
	40.1.2	100 x 38 x 1.2 mm	Metre	12		
	40.1.3	150 x 38 x 1.2 mm	Metre	10		
	40.1.4	225 x 38 x 1.2 mm	Metre	5		
	40.1.10	300 x 38 x 1.2 mm	Metre	2		
193	(MPPWD ELECT 2024) 40.2	Supply, installation, testing and commissioning of G.I. junction box for duct entry 1/3 compartments junction box (frame & trap) including all necessary civil works.				
	40.2.1	150 x 150 x 65 - 90 mm	Each	2		
	40.2.2	225 x 225 x 65 - 90mm	Each	1		
	40.2.3	300 x 300 x 65 - 90mm	Each	1		
	40.2.4	400 x 400 x 65 - 90mm	Each	1		
194	(MPPWD ELECT 2024) 40.3	Supply, installation, testing and commissioning of G.I. cross over/junction box for duct entry 1/3 compartments junction box c/w fly overs (frame & trap) including all necessary civil works.				
	40.3.1	225 x 225 x 65 - 90mm	Each	2		
	40.3.2	300 x 300 x 65 - 90mm	Each	2		
	40.3.3	400 x 400 x 65 - 90mm	Each	1		
195	(MPPWD ELECT 2024) 40.4	Supply, installation, testing and commissioning of G.I. coupler for under floor M-Tracks 25mm duct size wherever required.	Each	6		
196	(MPPWD ELECT 2024) 40.5	Supply, installation, testing and commissioning of G.I. coupler for under floor M-Tracks 38mm duct size wherever required.	Each	4		
197	(MPPWD ELECT 2024) 40.6	Supply, installation, testing and commissioning of G.I. fixing bracket wherever required for under floor M-Tracks of duct size as mentioned below :-				
	40.6.1	75 X 25 mm	Each	1		

	40.6.2	100 X 25 mm	Each	4		
	40.6.3	150 X 25 mm	Each	3		
	40.6.4	225 X 25 mm	Each	4		
	40.6.5	300 X 25 mm	Each	1		
198	(MPPWD ELECT 2024) 40.7	Supply, installation, testing and commissioning of G.I. fixing bracket wherever required for under floor M-Tracks of duct size as mentioned below :-				
	40.7.1	75 X 38 mm	Each	3		
	40.7.2	100 X 38 mm	Each	4		
	40.7.3	150 X 38 mm	Each	2		
	40.7.4	225 X 38 mm	Each	1		
	40.7.5	300 X 38 mm	Each	1		
199	(MPPWD ELECT 2024) 40.8	Supply, installation, testing and commissioning of G.I. vertical access box for raceway as mentioned below including all necessary civil works.				
	40.8.1	225 mm width raceway	Each	1		
	40.8.2	300 mm width raceway	Each	1		
		Supply of LT Cables				
200	(MPPWD ELECT 2024) 41.1	Supply, following sizes of PVC sheathed XLPE Insulated Aluminium conductor/copper conductor power/ multicore control armoured cable of 1.1 KV grade,Conforming to IS 7098 (latest ammended).				
	41.1.8	3½ core armoured				
	41.1.8.2	35 sq. mm	Metre	10		
	41.1.8.3	50 sq. mm	Metre	40		
	41.1.8.4	70 sq. mm	Metre	5		
	41.1.10	4 core armoured				
	41.1.10.1	4C X 6 sq mm Aluminium Armoured	Metre	10		
	41.1.10.3	4C X 16 sq mm Aluminium Armoured	Metre	20		

201	(MPPWD ELECT 2024) 41.4	Supply of XLPE insulated FRLS heavy duty power cable conforming IS-7098 (Part-1) 1988, 1100 Volt grade, 2/3/4/8/10/12 core ISI marked with copper stranded/solid conductor.				
	41.4.4	Armoured 4 core				
	41.4.4.4	4C X 6 sq mm Copper Armoured Cable	Metre	15		
	41.4.4.5	4C X 10 sq mm Copper Armoured Cable	Metre	10		
202	(MPPWD ELECT 2024) 32.3	Providing and fixing circular/hexagonal cast iron or M.S. sheet box for ceiling fan clamp of internal dia 140mm, 73mm height, top lid of 1.5mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/M.S. sheet box by mean of 3.3mm dia. round headed screws, one lock at the corners. Clamp shall be made of 12mm dia M.S. bar bent to shape as per standard drawing.	Each	4		
203	(MPPWD ELECT 2024) 47.1	Supply, installation, testing and commissioning of UPS with isolation transformer & battery for backup, minimum load power factor 0.8,power factor 0.99, having OVCD (over voltage cut-off device), having CVCF (constant voltage constant frequency, bypass parameters configurable, 2 stage charging(constant current/float charge), having temperature compensated charger, Fan speed control, digital signal processor controller, total harmonic distortion (current)- THDi (<10%@50% R Load, Input 1 phase voltage 230v, voltage range 110-300v, Output voltage (220AC/230AC/240AC ± 1%), Total harmonic distortion Voltage (THDv- <3% linear load, <5% nonlinear load, 90 % AC/AC efficiency, Over load capacity(105-110%: 3min, 111- 130%: 30Sec), operating temperature with full load 0-40°C, communication features (RS232, USB com port, Intelligent slot(optional). UPS installation with all required material arrangements as required as per IS specification.				

	47.1.4	5 KVA (1 phase input & 1 phase output)				
	47.1.4.1	For 30 minute backup, min. 4000 VAH	Each	1		
204	(MPPWD ELECT 2024) 53.3.4	Supply, installation, testing and commissioning of 240W power amplifier with 100,70V speaker op, combination XLR/RCA line in line out connectors. Speaker OP short circuit protection.(with require mounting arrangement)	Each	1		
205	(MPPWD ELECT 2024) 53.5.1	Supply, installation, testing and commissioning of 6W ceiling speaker with max SPL1M/1W 96dB. Frequency response of 80Hz-20KHz with a dispersion angle of 160 deg. The speaker should have tapings at 6W/3W/1.5W (with require mounting arrangement)	Each	4		
206	(MPPWD ELECT 2024) 53.5.4	Supply, installation, testing and commissioning of 10W wall mount with max SPL1M/1W 92dB. Frequency response of 150Hz-17KHz with a dispersion angle of 170 deg. The speaker should have tapings at 10W/5W (with require mounting arrangement)	Each	2		
207	(MPPWD ELECT 2024) 53.6.2	Supply, installation, testing and commissioning of Conference Chairman unit Nominal Acoustic Input 85dB SPL Frequency Response 400Hz to 10kHz. Length of the microphone from the base of the stem 488mm or more.	Each	1		
208	(MPPWD ELECT 2024) 53.6.3	Supply, installation, testing and commissioning of Conference Control unit Frequency response 200 Hz to 12 kHz Input Impedance 4.7 kohm Rated output Impedance 1 kohm Equaliser Center frequencies of filters 250Hz,2kHz and 8kHz Mic input sensitivity 1 mV (+1/-3dB) Aux input sensitivity 100mV (+1/-3dB)	Each	1		

209	(MPPWD ELECT 2024) 53.6.4	Supply, installation, testing and commissioning of Extension Cable 10 Mtrs. For connection of additional length other than provided in delegate /chairman unit	Each	1		
210	(MPPWD ELECT 2024) 53.7.3	Supply, installation, testing and commissioning of Professional tabletop microphone Audio frequency bandwidth70 - 18000 Hz Electrical impedance600 Ohms Recommended load impedance2000 Ohms Voltage9 to 52 V Current3 mA	Each	1		
211	(MPPWD ELECT 2024) 54.1	2 MP IP IR eyeball camera with H.264 video compression				
	54.1.1	Supply, Installation testing and commissioning of the IP dome camera shall be equipped with a 1/2.8 2 MP progressive scan CMOS imager to capture full HD 1080p (25/30 fps) images, a 3.6 mm fixed lens, and a waterproof (IP66) enclosure. As a true day/night solution, the camera shall use smart IR technology and provide up to 98 ft (30 m) of IR illumination. The camera shall accept PoE (802.3af) or 12 V DC power input. min. illumination:-0.1 lux @F1.2, AGC ON, 0 lux with IR video compression :- H.264, noise reduction: 3DNR,backlight compensation :- BLC/HLC/DWDR, encode mode:- CBR/VBR (freely adjustable in CBR, 5 levels in VBR). UL listed	Each	7		
212	(MPPWD ELECT 2024) 54.2	2 MP IP IR bullet camera with H.264 Video compression				

	54.2.1	Supply, Installation testing and commissioning of the IP bullet camera shall be equipped with a 1/2.8 2 MP progressive scan CMOS imager to capture full HD 1080p (25/30 fps) images, a 3.6 mm fixed lens, and a waterproof (IP66) enclosure. As a true day/night solution, the camera shall use smart IR technology and provide up to 98 ft (30 m) of IR illumination. The camera shall accept PoE (802.3af) or 12 V DC power input. min. illumination:-0.1 lux @F1.2, AGC ON, 0 lux with IR video compression :- H.264, noise reduction: 3DNR,backlight compensation :- BLC/HLC/DWDR, encode mode:- CBR/VBR (freely adjustable in CBR, 5 levels in VBR).	Each	1		
213	(MPPWD ELECT 2024) 54.13	2 MP IP 25X zoom PTZ camera				
	54.13.1	Supply, installation testing and commissioning of 2MP IP PTZ camera shall be equipped with a 1/2.8" exmor CMOS imager to capture full HD 1080p (50/60 fps)/ 25x zoom images, 4.8 mm 120mm, and a waterproof (IP66) IK10 impact resistant camera housing, as a true day/night solution, the camera shall use Smart IR technology and provide up to 328 ft (100m) of IR illumination. The camera shall accept PoE (802.3af) or 12 V DC power input. min. illumination:-0.08 lux color @ F2.0 (color, 1/3s, 30 IRE),0 lux B/W with IR LEDs on @ F2.0) video compression :- H.265 +, noise reduction: 2D/3D,backlight compensation :- True WDR 120 DB, built-in analytics, including face detection, automatically restores to previous PTZ and lens poSITC ion after power failure preset speed pan: Up to 240°/s, tilt: Up to 200°/s, angle of view H: 59.2° – 2.4° ,UL listed	Each	1		
214	(MPPWD ELECT 2024) 54.20	8 channel NVR with 2 SATA				

	54.20.1	Supply, installation testing and commissioning of 8 channel NVR. With 1080p real-time live view H.265/H.264MJPEG dual codec decoding up to 12 MP resolution preview & playback max 320 MBPS incoming bandwidth support 2 SATA HDDs up to 16TB, supports fisheye video de-warping in local and web user interface, supports visual or auditory notifications (a flashing light, bell, or siren) complete with UL certification	Each	1		
215	(MPPWD ELECT 2024) 54.27	8 port PoE switch with 2 SFP ports				
	54.27.1	Supply, installation testing and commissioning of 8 port PoE switch with 2 SFP ports, having security features like port security supports 64 MACs per port, auto surveillance VLAN, loopback detection automatically disables a port when a loop is detected, cable diagnostics allows administrators to determine cable status, UTP cat. 5, cat. 5e (100 m max.), full/half-duplex for 10/100 MBPS, full-duplex for 1000 MBPS, auto MDI/MDIX adjustment for all twisted-pair ports, switching capacity, 40 GBPS, maximum 64 bytes packet forwarding rate, 14.88 MBPS, ports 1 to 8 compliant with 802.3at	Each	1		
216	(MPPWD ELECT 2024) 54.30	Hard disk				
	54.30.1	Providing &fixing of 2 TB hard disk	Each	1		
217	(MPPWD ELECT 2024) 57.2	Supply, installation, testing & commissioning of L.E.D. Television (4K L.E.D. Display O.S. Webos /Android or equivalent, minimum 50 Hz refresh rate Min. 20 W speaker, Wifi/bluetooth enabled, minimum 2 HDMI & 1USB Port, i/c remote and wall/table top accessories)				
	57.2.1	32”	Each	1		
	57.2.5	65’	Each	2		

218	(MPPWD ELECT 2024) 57.1	Supply, installation, testing & commissioning of Refrigerator : minimum 3 Star rating, Smart Inverter Compressor,single/multy door, Smart Connect, With Base Stand/Drawer and other material as per required, Warranty: Minimum 1 year comprehensive warranty on complete product and a 10 years warranty on the compressor				
	57.1.2	160-180 Ltr. Capacity	Each	1		
219		Installation of OUTDOOR UNITS				
	MPPWD 2024					
a	46.33.11	Actual Capacity -20 HP	Nos	1		
220		Installation of INDOOR UNITS				
		-				
a	MPPWD 2024	DECORATIVE FOUR WAY CASSETTE TYPE SPLIT AIR CONDITIONER WITH GRILLES & ACCESSORIES :				
i		Actual Capacity -2.8 TR	Nos	3		
b	MPPWD 2024	DECORATIVE HIGH WALL SPLIT AIR CONDITIONER WITH ACCESSORIES :				
i		Actual Capacity -0.8 TR	Nos	3		
i		Actual Capacity -1.3 TR	Nos	1		
i	46.33.5	Actual Capacity -1.65 TR	Nos	2		
ii		Actual Capacity -2 TR	Nos	2		
	MPPWD 2024					
221	41.24	Laying of 16G G.I. Perfroated Tray for Refrigerant Piping, Cabling & Drain piping of 300/150mm Width with suppots & clamps etc.	RMT	118		
	MPPWD 2024					
222	46.34	Topping up / Recharging of Refrigerant Gas and Oil charge	KG	20		

	MPPWD 2024					
223	46.41	Electrical Power & Control wiring of copper from indoor and outdoor units with Earthing of 8 G G.I. wire as shwon in drawings also as per specifications.	RMT	153.15		
	MPPWD 2024					
224	46.43	MS Factory made Stand for all outdoor units duly epoxy paint / Powder coated.	KG	250		
225	MPPWD 2024	PVC Rigid Drain Piping of 6 Kg./CM^2 rating with Insulation of expanded polyethylene sections / strips.	RMT			
a	46.31.2	25 mm Dia.		32.8		
226	MPPWD 2024					
a	46.35	All Refrigerant Joints	Nos	10		
227	N.S	**CUBICAL SIZE = 2460MM X 3200MM**				
		Providing and fixing Cubicle of :size of 1500 W x 600 W-and ERU of size 900 W x 450 D mm with 1200 mm height panels. Providing and placing WISH panel & tile based modular workstation, with partition thickness as 52.4 mm thick and height - 1200mm including powder coated aluminium trims.Tiles: Combination of top tiles are clear glass tile. Bottom tiles - prelaminated. INTERMEDIATE BLOCKS Intermediate blocks are given in DL finsh.Wire Management - Wires shall be taken into the system through cable ducts from the junction boxes and it is carried upto the panels through concealed conduits inside the blocks. legs - System shall also have 120 mm high powder coated standalone panel legs to give the system an elevated look.Worksurface - out of 25 mm thick prelaminated particle board with flat PVC lipping edge banding .Pedestals - Nova pedestal flat metal front, full height free standing central locking of size 390 mm w x 435 mm d x 646 mm height 3drawer = 2box+1file. KBPT and CPU Trolleyt to be provided. The	EACH	6		

		manufacturer shall have quality and safety assurance like ISO 9001:2015, ISO-14001:2015 and ISO-18001:2007, ISO-50001: 2011, BIFMA membership, Greenguard certification and AIOTA certification. make Godrej as approved by Engineer In Charge.				
228	N.S	**BM CABIN**				
		Providing and fixing desk based system of size 2100mm W X 750mm D X 750mm HT, side storage 900x450x750HT, PDX SURFACE – 11 Module , Configuration : 1 Switch (16 Amp), 4 Universal Power (6 AMP) USB Charger Dual Port (2.1 AMP), With Standard Cable & GST Connectors.INNOFIT WIRELESS CHARGER (IS QF OS1). 27mm table - E1 25mm MDF 1mm laminate both side. PVC lipping/edging 2mm depending on requirement. Leg - 80x46mm triangular Pipe 2mm thick with 70-80 Micron Epoxy Powder Coat. 3MM CRCA brackets Weld on leg for Cross beam support and 3MM brackets with M6 m/c screw for top support. Leveller will be fitted in 3mm thick CRCA plate with M10 Bush insert. 10-15mm height adjustment allowable. Modesty - 18mm MDF Board BSL modesty with PVC lipping/edging 0.8mm. fixed on cable beam with 2mm thick CRCA L - shape angle bracket fixed with M6 Machine screw. Storage - 18mm BSL MDF Body, Drawer facia, Shutters ,Top / Bottom. Drawers with SLEEK TELESCOPIC SLIDE (STDS40-I-35-SC) from EBCO and drawer side back will be 18mm Prelam Particle Board. Chamfer handle. Central lockking with locking bar and NUMERICAL LOCK (P-CLP4-16L) lock for pedestal and no lock for Shutters. Key Board Tray, CPU Trolley, Footrest, Wireless charger, Greenguard gold - 240544-420. BIFMA International ANSI/BIFMA e3-2019 FURNITURE SUSTAINABILITY STANDARD - AE/Bifma/FSS/34, AE/Bifma/FSS/32, ALL INDIA OCCUPATIONAL THERAPISTS' ASSOCIATION Certificate of Ergonomic Design & Performance Ref. : AIOTA/ERG/C-357/2024-25, Integrate Management System - ISO 9001:2015, ISO	EACH	1		

		14001:2015, ISO 45001:2018. IND.228657/IM/U. Environmental Product declaration : EPD-IES-0014194.				
229	N.S	**CABIN -1 & 2**				
		Providing and fixing desk based system of size 1700mm W X 600mm D X 750mm HT, side storage 900x450x750HT, rear storage 1250x450x750mmHT + 450 extended top, PDX SURFACE – 11 Module , Configuration : 1 Switch (16 Amp), 4 Universal Power (6 AMP) USB Charger Dual Port (2.1 AMP) With Standard Cable & GST Connectors. INNOFIT WIRELESS CHARGER (IS QF OS1). 27mm table - E1 25mm MDF 1mm laminate both side based on availability. PVC lipping/edging 2mm depending on requirement. Leg - 80x46mm triangular Pipe 2mm thick with 70-80 Micron Epoxy Powder Coat. 3MM CRCA brackets Weld on leg for Cross beam support and 3MM brackets with M6 m/c screw for top support. Leveller will be fitted in 3mm thick CRCA plate with M10 Bush insert. 10-15mm height adjustment allowable. Modesty - 18mm MDF Board BSL modesty with PVC lipping/edging 0.8mm. fixed on cable beam with 2mm thick CRCA L - shape angle bracket fixed with M6 Machine screw. Storage - 18mm BSL Prelam Particle Board Body, Drawer facia, Shutters ,Top / Bottom. Drawers with SLEEK TELESCOPIC SLIDE (STDS40-I-35-SC) from EBCO and drawer side back will be 18mm Prelam Particle Board. Chamfer handle. Central lockking with locking bar and NUMERICAL LOCK (P-CLP4-16L) lock for pedestal and no lock for Shutters. Key Board Tray, CPU Trolley, Footrest, Wireless charger, Greenguard gold - 240544-420. BIFMA International ANSI/BIFMA e3-2019 FURNITURE SUSTAINABILITY STANDARD - AE/Bifma/FSS/34, AE/Bifma/FSS/32, ALL INDIA OCCUPATIONAL THERAPISTS' ASSOCIATION Certificate of Ergonomic Design & Performance Ref. : AIOTA/ERG/C-357/2024-25, Integrate Management System - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018. IND.228657/IM/U. Environmental Product	EACH	2		

		declaration : EPD-IES-0014194.				
230	N.S	**EMPLOYEE TABLE**				
		Providing and fixing Product Dimension in mm- 1500L X 600DX 750H Table Top-Thickness 25mm, Board Type-E1Grade-II Prelam Particle Board, Edges-2mm thick PVC edge lipping Bend on all exposed edges, No. of Piece-1, Finish-Prelaminated Understructure- End Legs-50mm x 50mm 1.6mm thick MS Pipe, Finish-Powder coated, Finish thickness-50-60 microns Wire Management- 250mm Ht Racway with 65mm Dia Wire Manager Grommet Modesty- Thickness- 18 mm, Board Type-E1 Grade-II Prelam Particle Board, Edges-2mm thick PVC edge lipping Bend on all exposed edges, No. of Piece- 1, Finish-Prelaminated Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO certifications by NABCB approved accredited certified agency) ,IGBC & Aiota Certified for desking, , Product is Bifma Level 2 certified by UL,Greenguard certified Product by UL, Greenpro certified product.Warranty- 3 years against manufacturing defect.	EACH	1		
231	N.S	**MEETING TABLE**				
		Providing and fixing desk based system as per the provided sizes below , Material - 27mm table - E1 25mm MDF 1mm laminate both side. PVC lipping/edging 2/0.8mm we used (2mm Front & 3 sides 0.8mm). Leg - 60x40mm triangular Pipe 2mm thick with 70-80 Micron Epoxy Powder Coat. 3MM CRCA brackets Weld on leg for Cross beam support and 3MM brackets with M6 m/c screw for top support. Leveller will be fitted in 3mm thick CRCA plate with M10 Bush insert. 10-15mm height adjustment allowable. A/F - Soft closing acess flap made from Aluminium extrusion with ABS material end caps & Braush -PVC EXTRUSION WITH SOFT NYLON WIRE(MINK-FLEX BRUSH FROM GERMANY) Greenguard gold - 240544-420. BIFMA International ANSI/BIFMA e3-2019 FURNITURE	EACH	1		

		SUSTAINABILITY STANDARD - AE/Bifma/FSS/34, AE/Bifma/FSS/32, ALL INDIA OCCUPATIONAL THERAPISTS' ASSOCIATION Certificate of Ergonomic Design & Performance Ref. : AIOTA/ERG/C-357/2024-25, Integrate Management System - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018. IND.228657/IM/U. Environmental Product declaration : EPD-IES-0014194. Wire management: Wiring Through Metal Powder Coated electricle panel.. Metal Access Flap 450mm On table top, for provision of standard 8 module Anchor Roma(Modules shall be upgraded as per the sizes of table and as instructed by architect/E.I.C) is provided. Beside each cutout, an additional cutout with plate is provided for provision of mounting Audio Visual Cables (eg. HDMI,VGA-A,etc).The customised tables shall be as per the working drawings and design provided by architect.				
232	N.S	**High Mesh Back Chair**				
		Providing and placing of High Mesh Back Chair Product Dimension- Total height : 1200 to 1260mm ,Backrest height-520 mm, Back width :490 mm , Seat height :440 mm ,Seat width :510 mm, Seat depth : 530 mm. Casters-. 60mm Castors. Twin Castors 60mm dia complying to ANSI / BIFMA X 5.1 – 2017 standards. Castors material - PP Base- . The 664mm dia (26 inches) five pronged base is made out of 30% GF nylon – Reinforced with bottom ribbing for additional buttress and strength. Tested prudently and rigorously as per ANSI/BIFMA X5.1- 2011 General Purpose Office Chair Standards Gas Lift- Standard Gas lift (100mm) Gas lift - Class 4 tested - ANSI BIFMA performance standards. The pneumatic height adjustment has an adjustment stroke of 95 -100 cm as per the seat height criteria Mechanism- Synchro tilt Mechanism – M06 mechanism offered in Multi lock features. This mechanism is manufactured out of cold Rolled Carbon Steel IS 513-1994 Sheets Arms- Two Way Adjustable Arms '2D' (Height & Swivel). Moulded self skinned polyurethane arms	EACH	2		

		confirming to IS 7078. Material- Nylon with GF 30% Arms Pad: material- Polyurethane with 2 mm metal insert. PU armrest is made of black integral skin polyurethane with 50-70 shore 'A' hardness and reinforced with MS insert. The armrest top is made of ABS & upholstered with foam & leather. Fabric Upholstery: Seat & Back are duly upholstered with approved fabric/mesh,Specially designed mesh with Global standards - IS 20 D- material- Polyester & Polyelastomer blend in a ratio of 54% & 46%. GSM 340. Abrasion resistance – confirming to ISO 12945- 2, Fabric : 100% polyester, Cushion with pre moulded foam of 50 - 55 density in the shape of plywood Back: The back shell material- PA + 30% GF- Inject moulded in 650 ton hydraulic machine. The back frame is imported version, Upholstered with special imported mesh Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018, ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) , Aiota Certified for seating, Product is Greenguard Gold certified by UL,Greenpro certified product. Warranty 3 years against manufacturing defect.				
233	N.S	**Medium Back Mesh Chair**				
		Providing and placing of medium back mesh chair of Dimension- Total height : 1100 to 1160mm , Backrest height-520 mm, Back width :490 mm , Seat height :440 mm ,Seat width :510 mm, Seat depth : 530 mm. Casters-. 60mm Castors. Twin Castors 60mm dia complying to ANSI / BIFMA X 5.1 – 2017 standards. Castors material - PP Base- . The 664mm dia (26 inches) five pronged base is made out of 30% GF nylon – Reinforced with bottom ribbing for additional buttress and strength. Tested prudently and rigorously as per ANSI/BIFMA X5.1- 2011 General Purpose Office Chair Standards Gas Lift- Standard Gas lift (100mm) Gas lift - Class 4 tested - ANSI BIFMA performance standards. The pneumatic height adjustment has an	EACH	4		

		adjustment stroke of 95 -100 cm as per the seat height criteria Mechanism- Synchro tilt Mechanism – M06 mechanism offered in Multi lock features. This mechanism is manufactured out of cold Rolled Carbon Steel IS 513-1994 Sheets Arms- Two Way Adjustable Arms '2D' (Height & Swivel). Moulded self skinned polyurethane arms confirming to IS 7078. Material- Nylon with GF 30% Arms Pad: material- Polyurethane with 2 mm metal insert. PU armrest is made of black integral skin polyurethane with 50-70 shore 'A' hardness and reinforced with MS insert. The armrest top is made of ABS & upholstered with foam & leather. Fabric Upholstery: Seat & Back are duly upholstered with approved fabric/mesh,Specially designed mesh with Global standards - IS 20 D- material- Polyester & Polyelastomer blend in a ratio of 54% & 46%. GSM 340. Abrasion resistance – confirming to ISO 12945- 2, Fabric : 100% polyester, Cushion with pre moulded foam of 50 - 55 density in the shape of plywood Back: The back shell material- PA + 30% GF- Inject moulded in 650 ton hydraulic machine. The back frame is imported version, Upholstered with special imported mesh Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018, ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) , Aiota Certified for seating, Product is Greenguard Gold certified by UL,Greenpro certified product. Warranty 3 years against manufacturing defect.				
234	N.S	**High Back Mesh Chair**				

		Providing and placing of High Back Mesh Chair of Dimension- Total height : 1000 to 1100mm , Backrest height-570mm, Backrest width :450mm , Seat height :465 mm ,Seat width :505 mm, Seat depth : 660 mm.Casters Twin Casters 50mm dia of Nylon material complying to ANSI / BIFMA X 5.1 – 2017 standards Base- The 660mm PCD (26 inches) five pronged base is made out of Nylon 30% GF Reinforced with bottom ribbing for additional buttress and strength. Tested prudently and rigorously as per ANSI/BIFMA X5.1-2017, The base Outer diameter shall be 750 mm with casters. MS ring is insert moulded for better grip in the swaged taper Gas Lift- Single swage Class 4 tested -ANSI BIFMA performance standards. The pneumatic height adjustment has an adjustment stroke of 95 -100 mm as per the seat height criteria and 360° revolving. Mechanism- Synchro tilt Mechanism - This mechanism is manufactured out of cold Rolled Carbon Steel IS 513-1994 Sheets The steel components are fabricated by using CO2 - MIG welding process for giving uniform surface finish with higher tensile strength. Springs are made out of Grade II material. Composite release levers for locking mechanism & Gas lift height adjustment. The mechanism is offered with synchro mechanism with single lever with one position lock with seat to back tilt ratio of 2:5. Arms- One way height adjustable arms moulded with Nylon GF 30%.The height adjustment button with Delrin P 500. Arm Pad : Material Polyurethane with 2 mm metal insert. PU armrest is made of black integral skin polyurethane with 50-70 shore 'A' hardness and reinforced with MS insert. Seat- Fabric upholstery: Seat is upholstered with micro fabric, 100% polyester- 180 GSM, Abrasion- > 50000 cycles Foam: Cushion with pre moulded foam of 55 kg/m3 density in the shape of plywood. Hardness – 22 to 28 kgf at 50% deflection Ply wood: 12 mm thick .	EACH	7		

		It is hot pressed ply - conforming to IS 303. The plywood is fitted with metal "T" nut to have metal to metal contact for the hardware used for fixing the mechanism and arms Back- The back outer is Injection moulded with Nylon GF30%. The back is upholstered with AN-70 mesh (Black) 320 GSM, 100% polyester. Chair back is connected to two directional adjustable Polypropylene lumbar support, Back is also offered with molded foam and upholstered with micro fabric, 100% polyester- 180 GSM, Abrasion- > 50000 cycles. Certificates- OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) Bifma Membership ,IGBC & Aiota Certified for seating, Product is Greenguard certified Product by UL, & Greenpro certified.				
235	N.S	**Medium Back Mesh Chair**				
		Providing and placing of medium back mesh chair of Dimension- Total height : 1020 to 1090mm , Backrest height- 570mm, Backrest width :550mm , Seat height :450 mm ,Seat width :500 mm, Seat depth : 500mm.Casters Twin Casters 50mm dia of Nylon material complying to ANSI / BIFMA X 5.1 – 2017 standards Base- The 660mm PCD (26 inches) five pronged base is made out of Nylon 30% GF Reinforced with bottom ribbing for additional buttress and strength. Tested prudently and rigorously as per ANSI/BIFMA X5.1-2017, The base Outer diameter shall be 750 mm with casters. MS ring is insert moulded for better grip in the swaged taper Gas Lift- Single swage Class 4 tested -ANSI BIFMA performance standards. The pneumatic height adjustment has an adjustment stroke of 95 -100 mm as per the seat height criteria and 360° revolving. Mechanism- Synchro tilt Mechanism - This mechanism is manufactured out of cold Rolled Carbon Steel IS 513-1994 Sheets The steel components are fabricated by using CO2 - MIG welding process for giving uniform	EACH	12		

		surface finish with higher tensile strength. Springs are made out of Grade II material. Composite release levers for locking mechanism & Gas lift height adjustment. The mechanism is offered with synchro mechanism with single lever with one position lock with seat to back tilt ratio of 2:5. Arms- One way height adjustable arms moulded with Nylon GF 30%.The height adjustment button with Delrin P 500. Arm Pad : Material Polyurethane with 2 mm metal insert. PU armrest is made of black integral skin polyurethane with 50-70 shore 'A' hardness and reinforced with MS insert. Seat- Fabric upholstery: Seat is upholstered with micro fabric, 100% polyester- 180 GSM, Abrasion- > 50000 cycles Foam: Cushion with pre moulded foam of 55 kg/m3 density in the shape of plywood. Hardness – 22 to 28 kgf at 50% deflection Ply wood: 12 mm thick .				
		It is hot pressed ply - conforming to IS 303. The plywood is fitted with metal “T” nut to have metal to metal contact for the hardware used for fixing the mechanism and arms Back- The back outer is Injection moulded with Nylon GF30%. The back is upholstered with AN-70 mesh (Black) 320 GSM, 100% polyester. Chair back is connected to two directional adjustable Polypropylene lumbar support, Back is also offered with molded foam and upholstered with micro fabric, 100% polyester- 180 GSM, Abrasion- > 50000 cycles. Certificates- OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) Bifma Membership ,IGBC & Aiota Certified for seating, Product is Greenguard certified Product by UL, & Greenpro certified.				

236	N.S	**HIGH BACK CHAIR**				
		Providing and placing of high back chair of Dimension- Total height 1120 to 1290mm: , Backrest height- 600mm, Back width : 550mm , Seat height : 430mm ,Seat width : 500mm, Seat depth : 530mm. Casters-. Twin Casters 60mm dia with High Impact Nylon Core & Hub With Soft PU Treads on wheelcomplying to ANSI / BIFMA X 5.1 – 2017 standards Base- . The 660mm PCD (26 inches) five pronged base fabricated withCR Sheets of 1.2 mm thick,It is reinforced with ribs, CO2 MIG welded to provide additional strength and support. Chrome plated to thickness of 10-12 microns. Gas Lift- .Single swage Class 4 tested -ANSI BIFMA performance standards Mechanism- Synchro tilt Mechanism – NBA 005 mechanism offered in Multi lock feature,manufactured out of cold Rolled Carbon Steel IS 513-1994 Sheets,Composite release levers for locking mechanism in 4 locking positions, seat to back angle & Gas lift height adjustment Arms- Adjustable Arms '3D' (Height, Side &Swivel). CFC free, height adjustable arms moulded withNylon with 30%GF Arms Pad- Material- Polyurethane (PU) armrest is made of black integral skin polyurethane with 45-55 shore 'C' hardness and reinforced with MS insert.*PU arm pad Seat- Offered with an option of Multi lock with seat slide.Seat Sliding Mechanism:This seat slide mechanism can make seat move forward to adjust the required seat depth ,it offers multiple locking positions,Fabric : 100% polyester-310GSM Foam- Contoured Cushion with pre moulded foam of 62 - 67 kg/m3 density in the shape of plywood,Ply wood: 12 mm thick with 9 ply Back- Outeris injectionmoulded with PPGF30% and Inner with PP, upholstered with 620 G/Y,100%elastomer nylon mesh ,Chair back connected to two directional adjustable Polypropylene lumbar support for achieving comfortable seating posture to the user. Certificates : Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO	EACH	1		

		certifications by NABCB approved accredited certifier agency) Aiota Certified for seating & Bifma Certified product , Prodcut is Greenguard certified Product by UL, & Greenpro certified product Warranty- 3 years against manufacturing defect.				
237	N.S	**Medium Back Mesh Chair**				
		Providing and placing of medium back chair of Dimension- Total height 1020 to 1190mm: , Backrest height- 600mm, Back width : 550mm , Seat height : 430mm ,Seat width : 500mm, Seat depth : 530mm. Casters-. Twin Casters 60mm dia with High Impact Nylon Core & Hub With Soft PU Treads on wheelcomplying to ANSI / BIFMA X 5.1 – 2017 standards Base- . The 660mm PCD (26 inches) five pronged base fabricated withCR Sheets of 1.2 mm thick,It is reinforced with ribs, CO2 MIG welded to provide additional strength and support. Chrome plated to thickness of 10-12 microns. Gas Lift- .Single swage Class 4 tested -ANSI BIFMA performance standards Mechanism- Synchro tilt Mechanism – NBA 005 mechanism offered in Multi lock feature,manufactured out of cold Rolled Carbon Steel IS 513-1994 Sheets,Composite release levers for locking mechanism in 4 locking positions, seat to back angle & Gas lift height adjustment Arms Adjustable Arms '3D' (Height, Side &Swivel). CFC free, height adjustable arms moulded withNylon with 30%GF Arms Pad- Material- Polyurethane (PU) armrest is made of black integral skin polyurethane with 45-55 shore 'C' hardness and reinforced with MS insert.*PU arm pad Seat- Offered with an option of Multi lock with seat slide.Seat Sliding Mechanism:This seat slide mechanism can make seat move forward to adjust the required seat depth ,it offers multiple locking positions,Fabric : 100% polyester-310GSM Foam- Contoured Cushion with pre moulded foam of 62 - 67 kg/m3 density in the shape of plywood,Ply wood:	EACH	3		

		12 mm thick with 9 ply Back- Outeris injectionmoulded with PPGF30% and Inner with PP, upholstered with 620 G/Y,100%elastomer nylon mesh ,Chair back connected to two directional adjustable Polypropylene lumbar support for achieving comfortable seating posture to the user. Certificates : Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) Aiota certified for seating & Bifma Certified product , Prodcut is Greenguard certified Product by UL, & Greenpro certified product Warranty- 3 years against manufacturing defect.				
238	NS	**Medium (Black) Back**				
		Providing and placing of medium back chair of Dimension-Total height: 900mm to 1070mm , Backrest height-540 mm, Backrest width :450 mm , Seat height :420 mm ,Seat width :500 mm, Seat depth : 500 mm Casters-Twin Castors 50mm diacomplying to ANSI / BIFMA X 5.1 – 2002,Castors will be Polypropylene. Base-Nylon Base- The 640mm dia (26 inches) five pronged base is made out of 30% GF nylon. Gas Lift-Standard Gas lift 100 mm stroke with pneumatic height adjustment as per the seat height criteria. - Class 4 as per ANSI BIFMA performance standards. Mechanism- Centre Tilt Mechanism,compact and stable with 8? x 6? mount holes,Provided with common lever for locking and up/down adjustment and horizontal movement of the lever to engage and disengage lock at upright position,Full length plastic knob provided to cover lever bar giving better aesthetical appeal to the mechanism. Knob provided to adjust spring tension to suit individual user in order to ensure maximum chair comfort. Arms- Fixed Arms Injected molded arms- Polypropylene with 20% GF. The PP arms will have steel inserts. The arm profile should blend with the back profile without gap. Seat- Fabric Upholstery: Seat is upholstered with micro	EACH	14		

		fabric, 100% polyester,The arm and back shall be fixed together to the seat with Allen bolts.The bolts will be screwed to the "T" nuts fixed to the plywood seat, back should have the option of mesh back AN-70 (black) and AN-75(grey). GSM for mesh 340,Fire rated fabric confirming to BSEN 1021 and IS 15061- 2012 Back- Mesh back on injected molded PP with 20% GF,back should have the option of mesh or fabric back. The mesh will be GSM 340 grade Foam: Seat cushion with pre molded foam of 50 - 60 density in the shape of plywood. Density -- 52 kg/m3, Hardness -- 12.6kgf at 25%- Back cushion density- 32g/sq in Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency), Aiota Certified for seating., Greenguard certified Product by UL, Product is Greenpro certified product. Warranty- 3 years against manufacturing defect.				
239	NS	**Smart Low Back Mesh Chair**				
		Providing and placing of low back chair of Dimension - Total height : 840 to 960 mm , Backrest height- 400 mm, Back width : 510mm , Seat height : 430 mm ,Seat width : 500 mm, Seat depth : 520 mm. Casters- Twin Casters 50mm dia of Nylon. Base- The 660mmdia five pronged base is made out of Ms Nylon Plating. Gas Lift- Standard Gas lift - Class 4 tested. Mechanism- Centre Tilt Mechanism Arms- Fixed arms used moulded with 100% Polypropylene. Seat- Seat is upholstered with micro fabric, 100% polyester. Back- The back outer is injection moulded with Nylon GF15% and upholstered with 320 GSM, 100% polyester AC-60 mesh. Certificates :OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) ,IGBC & Aiota Certified, Product is Greenpro Certified Product. Warranty- 3 years against manufacturing defect.	EACH	1		

240	N.S	**CONFERENCE ROOM-SOFA**				
		Providing and Supply of sofa made of fine quality leatherette,the structure is made of silver wood and pine wood 32-40 density foam is used Roly poly filling is used for giving comfort and extra softness to sofa Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO 50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) ,IGBC & Aiota Certified. The legs shall be made up of stainless steel material as per manudacturers specifications.	EACH	2		
241	N.S	Providing and Supply of Two Seater Sofa. It should be made of Pine Wood and 12 mm Plywood (IS-303, Commercial Plywood) frame, upholstered with PVC upholstery (0.9 mm thickness, Weight – GSM - 575) in black color. The Slab stock foam used has to be soft for comfort seating. Seat Foam thickness to be 69, 22, 10 mm with density of 26 Kg/M3. Back Foam thickness to be 45 mm with density of 28 Kg/M3. Armrest Foam thickness to be 45 mm with density of 26 Kg/M3.Belt / Webbing material to be 68 mm and 48 mm wide. Plastic legs to be fitted along with PVC bushes. Two Seater Overall size: 132.0 cm (W) x 86.0 cm (D) x 83.0 cm (H) x 39.5.0 cm (SH). The manufacturer shall have quality and safety assurance like ISO 9001:2015, ISO-14001:2015 and ISO-18001:2007, ISO-50001: 2011, BIFMA membership, Greenguard certification and AIOTA certification make as approved by Engineer In Charge.	EACH	1		

242	N.S	Providing and Supply of Three Seater Sofa. It should be made of Pine Wood and 12 mm Plywood (IS-303, Commercial Plywood) frame, upholstered with PVC upholstery (0.9 mm thickness, Weight – GSM - 575) in black color. The Slab stock foam used has to be soft for comfort seating. Seat Foam thickness to be 69, 22, 10 mm with density of 26 Kg/M3. Back Foam thickness to be 45 mm with density of 28 Kg/M3. Armrest Foam thickness to be 45 mm with density of 26 Kg/M3.Belt / Webbing material to be 68 mm and 48 mm wide. Plastic legs to be fitted along with PVC bushes. Three Seater Overall size: 175.0 cm (W) x 86.0 cm (D) x 83.0 cm (H) x 39.5.0 cm (SH) . The manufacturer shall have quality and safety assurance like ISO 9001:2015, ISO-14001:2015 and ISO-18001:2007, ISO-50001: 2011, BIFMA membership, Greenguard certification and AIOTA certification make as approved by Engineer In Charge.	EACH	1		
243	N.S	**RECEPTION - SOFA**				
		Providing & Supply of Sofa THREE Seat Executive Sofa : Understructure is made up of pinewood members. Pinewood are of cross sections 22x64mm, 34x64mm & 16x35mm without having major knots & defects on the surface. 3mm MDF is stapled on the seat front baton. Zigzag spring of dia. 3.8mm is mounted on the seat structure using plastic spring mounting clip for support & additional cushioning purpose. Non woven fabric is stapled on the seat structure frame above the spring assembly to avoid direct contact between the metal springs and the seat foam. This prevents seat foam from tearing. Powder coated MS support pipe is fitted with the wooden seat frame to give additional strength to the structure. Complete understructure is made by gluing, nailing & stapling. • FOAM : Seat is made of PU foam with density 28 kg/m3 with a top layer of supersoft PU foam with density 32 kg/m3. Seat front bottom is stapled with the PU foam with density 28 kg/m3. • UPHOLSTERY : Seat upholstery is made in	EACH	2		

		polyester fabric with partitions.Backrest :Understructure: Understructure ‹s made up of combination of plywood & pinewood members. Plywood is 12+1mm thk. [moisture resistance & termite proof as per IS:303] & pinewood are of cross sections 16x35mm, 12x22mm & 16x74mm and triangular batons of 22x75 without having major knots & defects on the surface. HDPE sheet is stapled on the back and front of the structure and on the ear ply. • FOAM : Backrest is made up of combination of PU foam with density 28 kg/m3 and 32 kg/m3 super-soft on the front lumber portion and the shoulder area has supersoft PU foam with density 32 kg/m3. This is coveFed with a top layer of 200 gsm recron sheet. The top surface has foam with density 32 kg/m3 and a layer of 200 gsm recron sheet. Complete back surface & underarm of backrest is glued with the PU foam with density 28 kg/m3. • UPHOLSTERY: Backrest upholstery is made in polyester fabric jacket with recron sheet cushions of 200 gsm sandwitched between a layer of white non-woven cloth of 30 gsm.				

		The upholstered jacket has a button at the front. ARMREST:• Understructure: Understructure is made of combination of plywood & pinewood members. Plywood is 12+1mm thk. [moisture resistance & termite proof as per IS:303j & pinewood are of cross section 16X35mm without having major knots & defects on the surface. 2mm cardboard and HDPE sheet is stapled on the structure to provide a surface for sticking foam. • FOAM : Armrest is made of PU foam with density 28 kg/m3. • UPHOLSTERY : Armrest upholstery is made in polyester fabric.Legs: Option A: Rubberwood [Grade-Aj legs with the M8 stud for fitting at the bottom surface of the Armrest LH & RH. Legs are coated with PU clear lacquer coat [black matt finish].[Min. hardness - 1H] Option B: Plastic injection moulded tegs made of material PA-6 with insert of M8 stud for fitting at the bottom surface of the Armrest LH & RH. Plastic legs are black [matte finish]. ASSEMBLY : Upholstered seat, backrest, armrest-LH & armrest-RH are assembled together with the M8 bolts, nuts & washer. Then a non-woven is stapled on the bottom surface to cover the structure. PACKET Each packet contains one assembled sofa without legs and a separate hardware packet containing 4 nos. of rubberwood legs/ plastic injection moulded legs. Size - 3 Seater (W)1890*(D)820*(H)900mm -/+ 20 mm. The manufacturer shall have quality and safety assurance like ISO 9001:2015, ISO-14001:2015 and ISO-18001:2007, ISO-50001: 2011, BIFMA membership, Greenguard certification and AIOTA certification . make as approved by Engineer In Charge.				

		The upholstered jacket has a button at the front. ARMREST:• Understructure: Understructure is made of combination of plywood & pinewood members. Plywood is 12+1mm thk. [moisture resistance & termite proof as per IS:303j & pinewood are of cross section 16X35mm without having major knots & defects on the surface. 2mm cardboard and HDPE sheet is stapled on the structure to provide a surface for sticking foam. • FOAM : Armrest is made of PU foam with density 28 kg/m3. • UPHOLSTERY : Armrest upholstery is made in polyester fabric.Legs: Option A: Rubberwood [Grade-Aj legs with the M8 stud for fitting at the bottom surface of the Armrest LH & RH. Legs are coated with PU clear lacquer coat [black matt finish].[Min. hardness - 1H] Option B: Plastic injection moulded tegs made of material PA-6 with insert of M8 stud for fitting at the bottom surface of the Armrest LH & RH. Plastic legs are black [matte finish]. ASSEMBLY : Upholstered seat, backrest, armrest-LH & armrest-RH are assembled together with the M8 bolts, nuts & washer. Then a non-woven is stapled on the bottom surface to cover the structure. PACKET Each packet contains one assembled sofa without legs and a separate hardware packet containing 4 nos. of rubberwood legs/ plastic injection moulded legs. Size - 3 Seater (W)1890*(D)820*(H)900mm -/+ 20 mm. The manufacturer shall have quality and safety assurance like ISO 9001:2015, ISO-14001:2015 and ISO-18001:2007, ISO-50001: 2011, BIFMA membership, Greenguard certification and AIOTA certification . make as approved by Engineer In Charge.				

244	N.S	Providing & supply of centre table table glass: It is 10 ±0.3 mm thick black tinted Toughened glass UV glued with bushes made in SS 202 grade for focing with understructure. SIDE & CENTER TABLE UNDERSTRUCTURE: It is a welded Assembly made in SS 202 grade Dia. 12±0.04 as per IS:1762. Width of table= 112.0 cm, Depth=60.0 cm, height=34.9 cm. The manufacturer shall have quality and safety assurance like ISO 9001:2015, ISO-14001:2015 and ISO-18001:2007, ISO-50001: 2011, BIFMA membership, Greenguard certification and AIOTA certification make as approved by Engineer In Charge.	EACH	1		
245	N.S	Providing and Supply of table having Dimension- 600WX600DX 450H Table top 18mm thk prelaminated Hydrosheild table top with 2mm edge banding finish machine pressed. Understructure: supported on MS powdercoated leg with plastic base stud .The thickness of the powder coat should be 45-50 microns and should pass a salt spray test for 1000 hours. The coating should also have a scratch hardness of 3 Kgs. Proper surface preparation, including degreasing and zinc phosphating shall be required for adhesion and durability. Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) ,IGBC & Aiota Certified for desking.	EACH	2		

246	N.S	Providing and Supply of table having Dimension- 600WX600DX 450H Table top 18mm thk prelaminated Hydrosheild table top with 2mm edge banding finish Understructure: supported on MS powdercoated leg with plastic base stud . The thickness of the powder coat should be 45-50 microns and should pass a salt spray test for 1000 hours. The coating should also have a scratch hardness of 3 Kgs. Proper surface preparation, including degreasing and zinc phosphating shall be required for adhesion and durability.Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) ,IGBC & Aiota Certified for desking.	EACH	1		
247	N.S	**RECEPTION TABLE - (2000WX750DX750H)**				
		Providing and fixing reception counter made up of 12mm water proof ply main frame structure 50mm thick of size 2000mm L x 650mm Dx1200mm H. The table frame structure shall be finished with 1mm decorative laminate .The frame shall hold table top of size 1800mmx 600mm (Thickness from front 18mm)finished in 1mm laminate .The main frame shall hold from outside boxing in 12mm ply of size 2500mm x 800mm from front 200mm from above ffl, projected from main frame surface in front 100mm , LHS = 200MM, RHS = 400(supported by SS stand 50mm dia , ht = 200mm.The projected box shall be finished with 1mm thick laminate from all side with 10x10mm SS strip at top and bottom.The top of the main frame shall have toughened glass on SS studs of size 3000mm x 200mm.The table shall have storage unit of side 600mm x 600mm x 700mm with drawers complete with ss handles, locks, telescopic channels, soft closing hinges etc.The table shall have Configuration : 1 Switch (16 Amp), 4 Universal Power (6 AMP) USB Charger Dual Port (2.1 AMP) With Standard Cable & GST Connectors. The table shall be provided with all facilities related to	EACH	1		

		power/lan/data etc.The reception table shall be executed as per the furniture working drawings and all material , shades , fittings duly approved by architect/E.I.C. The table shall include the cost of logo of ECGC in premium acrylic of required size.				
248	N.S	**RECTANGULAR DINNING TABLE**				
		providing & supply of Dining Table of size 800 x 800 x 745mm: TOP - Made of 25 mm (+/- 1 mm) thick MDF (IS-12406). Painted - PU coating on a sealer coat. PU coating done on both top and bottom surfaces. PU coating has hardness of 1H - 2H. Top is fitted to understructure with M6x20 Philips Head machine screws. Understructure is foldable and stackable, made of combination of Aluminum and plastic. Center column is of Aluminum extrusion of dia 70 mm, which has tro be anodized. Base is made of 2 pieces of die cast aluminum with buffed finish. It is boilted together with center column and top flange. The manufacturer shall have quality and safety assurance like ISO 9001:2015, ISO-14001:2015 and ISO-18001:2007, ISO-50001: 2011, BIFMA membership, Greenguard certification and AIOTA certificationmake Godrej as approved by Engineer In Charge.	EACH	1		
249	N.S	**RECTANGULAR DINNING TABLE-1800X900X750MM**				
		Providing and placing rectangular dinning table as per required sizes having Table top 18mm thk prelaminated Hydrosheild table top/ ISO Table top. End Legs: SS Chrome Finished foldable understructure. Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) ,IGBC & Aiota Certified for desking.	EACH	1		
250	NS	**Perform Discussion Table 1050 Dia**				

		Providing and placing of Discussion Table of 1050mm Diameter, Table Top: 25mm thick Pre laminated particle board with 2mm PVC edge lipping on all exposed edges , End Legs: MS powder coated square perform legs (50X50) . The thickness of the powder coat should be 45-50 microns and should pass a salt spray test for 1000 hours. The coating should also have a scratch hardness of 3 Kgs. Proper surface preparation, including degreasing and zinc phosphating shall be required for adhesion and durability.Wire Management: 300mm Aluminium Flip Up and provision to mount switches and sockets on PVC cable dump. Wire Entry: Vertical Wire Entry Cover or Vertebra Certificates : OEM is ISO9001 :2015, ISO14001 :2015 , ISO45001 :2018 , ISO50001 :2018 (All ISO certifications by NABCB approved accredited certifier agency) ,IGBC & Aiota Certified for desking, , Product is Bifma Level 2 certified by UL,Greenguard certified Product by UL, Greenpro certified product. Warranty- 3 years against manufacturing defect.	EACH	1		
251	NS	**FAME**				
		Providing and placing chair of 4 Legs Stackable Chair in made up of High-quality virgin plastic Plastic Armless Chair (Iron Black) build,A smooth matte finish of dimension:Width (cm) 43,Depth (cm) 51,Height (cm) 86,Weight (Kg) 2 , 110kg load bearing capacity with Stainless steel legs and self weight of 2.75 Kilograms,manufacturers specifications.	EACH	10		

252	NS	Provioing and fixing in place Compactor Double body Mobile Main Unit of Size-1830W x 910D x 2150 Ht as per specifications. The system shall have a rigid knock down construction made out of 0.8 mm thick "Cold rolled Closed Annealed" steel body, Adjustable shelves made up of 0.8 mm thicK "Cold Rolled Closed Annealed" sheet. Bottom track channel shall be 65x25x2 mm, With central locking arrangement. Each body shall have 5 loading levels adjustable shelves of load carrying capacity of 70 kg per shelf. All steel components shall be given anti rust surface treatment and powder coated with epoxy polyester powder with dry film thickness of minimum 60-70 microns.	EACH	9		
253	NS	Provioing and fixing in place Compactor Single body Mobile Main Unit of Size-1830W x 455D x 2150 Ht as per specifications. The system shall have a rigid knock down construction made out of 0.8 mm thick "Cold rolled Closed Annealed" steel body, Adjustable shelves made up of 0.8 mm thicK "Cold Rolled Closed Annealed" sheet. Bottom track channel shall be 65x25x2 mm, With central locking arrangement. Each body shall have 5 loading levels adjustable shelves of load carrying capacity of 70 kg per shelf. All steel components shall be given anti rust surface treatment and powder coated with epoxy polyester powder with dry film thickness of minimum 60-70 microns.	EACH	2		

254	NS	Provioing and fixing in place Compactor Single body Fixed Main Unit of Size-1830W x 455D x 2150 Ht as per specifications. The system shall have a rigid knock down construction made out of 0.8 mm thick "Cold rolled Closed Annealed" steel body, Adjustable shelves made up of 0.8 mm thicK "Cold Rolled Closed Annealed" sheet. Bottom track channel shall be 65x25x2 mm, With central locking arrangement. Each body shall have 5 loading levels adjustable shelves of load carrying capacity of 70 kg per shelf. All steel components shall be given anti rust surface treatment and powder coated with epoxy polyester powder with dry film thickness of minimum 60-70 microns.	EACH	2		
		DRY WALL PARTITION				
255	N.S	Providing and fixing dry wall partition of thickness 100-122mm as per the given specifications. Max Reachable height : 5070mm, Fire Rating : 120mins, Acoustic(Rw) : 52*dB, Floor/Ceiling Channel : 72x32x32x0.5mm, Stud Type : Closed Stud, Stud Size : 70x34x34x0.6mm, Noggin Channel : Closed Stud, Insulation : 50mm Glasswool of 20kg/m3, Stud Spacing : 407mm, Drywall Screw :ø3.5x25,35, Metal Screw : ø4.2x13mm, Anchor Fastener : Rawl Plug ø8x45mm, Sealant : Fire & Acoustic Sealant.All work should be carried out as per the recommendation of Engineer In charge and as per recommended practices of the manufacturer.All overlaps in the metal studs required for extension to achieve the wall heigh shall be boxed for minimum length of 300mm and no horizontal joints of the boards should coincide with the overlap. All Openings cut outs & periphery shall be treated with Fire & Acoustical sealant. Contractor shall overall be responsible for the structural stability and safety of the partition system. All the performance test to be carried out at NABL accredited/ government approved lab. Note: Control Joint to be provided at every 10m c/c along the length of wall. For heights between 4.2m to 8m, use Deep	SQM	146.76		

		Ceiling Channel at head. Floor channel to be wrapped with 70µ Self Adhesive LDPE moisture barrier film. For joining two studs, Floor channel capping of 600mm is required. Levelline CT corner bead to be applied at all corners. The sound insulation value is estimated with reference to INSUL and system with similar configuration.				
		MODULAR GLAZED PARTITION & DOOR				
256	N.S	Providing and fixing modular glazed partition (Single Glazed)Providing and installation of Full Height Modular Aluminium Single Glazed partitioning frame of size (45mm x 25mm) as top channel & wall starter, (45mm x 25mm) as Bottom channel,Using Glass to glass butt joint with I , L & T Joint.Partition Dimension – 45mm x 25mm, Finish – BLACK FINISH , 10mm thick. Clear Toughened Glass, Partition Height : H-2400mm.	SQM	17.22		
257	N.S	Providing and fixing modular glazed partition (Double glazed)Supply & Installation of Modular Full height Aluminium Double glazed partitioning frame of size (100mm x 25mm) as top channel & wall starter, (100mm x25mm) as Bottom channel, Using Glass to glass butt joint with I , L & T Joint, Partition Dimension – 100mm x 25mm, Finish – BLACK FINISH , 10mm+10mm thick. Clear Toughened Glass .Partition Height : H-2400mm.	SQM	8.04		

258	N.S	Providing and fixing Modular Aluminium Stile door using(45mm x 25mm) for doorframe, (60mm x 35mm) for stile door shutter frame, Doorframe Dimension – 45mm x 25mm. Stile door shutter frame dimension - 60mm x 35mm Finish – BLACK FINISH, 10mm thick. Clear Toughened Glass.Hardware :-Flush Hinge, Open Door closer with hold open unit, Double D handle - 450mm x 25mm, Dead Lock -30mm Backset -60 mm cylinder, Drop down seal, Door stopper .Door Size - 900x2100MM.	EACH	5.00		
259	N.S	Providing and fixing Modular Aluminium Stile door using (45mm x 25mm) for doorframe, (60mm x 35mm) for stile door shutter frame, Doorframe Dimension – 45mm x 25mm. Stile door shutter frame dimension - 60mm x 35mm, Finish – BLACK FINISH, 10mm thick. Clear Toughened Glass Hardware :-Flush Hinge, Open Door closer with hold open unit, Double D handle - 450mm x 25mm, Dead Lock -30mm Backset -60 mm cylinder, Drop down seal, Door stopper.Door Size - 1000x2100MM	EACH	1.00		
260	N.S	Providing and fixing Modular Aluminium Stile door using (45mm x 25mm) for doorframe, (60mm x 35mm) for stile door shutter frame, Doorframe Dimension – 45mm x 25mm. Stile door shutter frame dimension - 60mm x 35mm, Finish – BLACK FINISH, 10mm thick. Clear Toughened Glass Hardware :-Flush Hinge, Open Door closer with hold open unit, Double D handle - 450mm x 25mm, Dead Lock -30mm Backset -60 mm cylinder, Drop down seal, Door stopper.Door Size - 1200x2100MM	EACH	1.00		

261	NS	Providing and fixing Modular Aluminium Stile door using -Supply & Installation of Modular Aluminium Stile door frame of 100 mm System, (100mm x 25mm) for doorframe (75mm x 45mm) for stile door shutter frame , Doorframe Dimension – 100mm x 25mm. Stile door shutter frame dimension - 75mm x 45mm,5mm+5mm thick. clear Toughened Glass HARDWARE LIST - Flush Hinge, Open Door closer with hold open, Mortise Lock Body 35mm, Cylinder Key To Knob 70 mm, Drop down seal, Door Stoper,Door Size :- 900mm x 2100mm	EACH	1.00		
262	N.S	Providing and fixing Modular Aluminium Stile door Using (45mm x 25mm) for doorframe, Using (60mm x 35mm) for stile door shutter frame, Doorframe Dimension – 45mm x 25mm, Stile door shutter frame dimension - 60mm x 35mm, Finish – BLACK FINISH, 10mm thick. Clear Toughened Glass Hardware :- Flush Hinge, Open Door closer with hold open unit, Double D handle - 450mm x 25mm, Dead Lock -30mm Backset -60 mm cylinder, Drop down seal, Door stopper.Door Size - 1800x2100MM	EACH	1.00		
263	N.S	**ROLLERS BLINDS**				
		Providing, fixing and commissioning of Roller Blinds with DRIVE UNIT of patented clutch for quick, easy and safe installation, molded plastic with steel spring support and inserted into the tube end. It shall be driven by a ball chain pulley with ball chain and can be positioned at right side or left hand side of the Shade. The Shade when lowering or raising, shall be automatically locked in position upon release of the ball chain by means of a built in friction lock. Universal clutch for left and right hand operation. Chain Gear Ratio of 1.75:1 The END PLUG shall be molded of plastic with a steel location pin. The plug shall be inserted into the tube end. (Opposite to the Drive Unit) for ease of				

		installation.The SUPPORT BRACKETS (Bracket 55) shall be of coated steel & provided with covers and used in right hand or left hand positions differentiated by the acceptance of the of the rectangular drive unit support or the round idler plug pin. Can be installed a) On Face b) Ceiling Mount c) On Frame d) in Recess .The Bracket should be protruding outside maximum of 80mm . The ROLLER TUBE shall be of extruded aluminum with 50mm diameter & skin thickness of 1mm and shall incorporate a keyway integral with the tube to accommodate the spline. The BOTTOM RAIL shall be a Flat Bottomrail of Aluminium Extruded as a stiffening element inserted into a bottom rod pocket. The material may be timber, PVC covered steel tube or VB Bottomrail.				
		Providing, fixing and commissioning of blinds of Translucent Fabric : Fabric shall be made out of 100% polyester material which suits your requirement of a light filtering and cutting sun glare. It is pigment coated from both the sides with vinyl acetate of thickness 0.32– 0.5mm (ISO 2286-3) and weighing 270 - 295 gsm per sqm (ISO 2286-2)with openness factor of 0% .Shrinkage% (Warp <0.5% Warp < 0.5%) As per ISO 4674. Colour fastness Grade 8 ISO105 B02:2014 > 5-6 AATCC TM 16.3-2014; Option 3; Xenon Arc lamp.	SQM	18.96		
		SIGNAGES				
264	N.S	**WALL MOUNTED**				
		Providing and fixing signage made up of Modular Aluminium extrusions (Alloy 6060 as per European standards EN755-2-2008 tensile strength 190 MPa typical BHN is 70 from virgin aluminium homogeneous billet) with Premium grade Anodizing (Thickness 15-20 microns) as per International standards, with 10 years warranty under normal working conditions. Sign is single sided with 1 aluminium profile click fitted on 2 plastic moulded endcaps.Sign is including all plastic injection moulded end caps black in shade which are directly press fitted				

		,media can be flat bed UV printed on panels/ profiles.MPI panels fitted and installed at site in plumb and level at specified location as per drawings to the satisfaction of the Architect and Engineer-in-charge.				
		125X300MM	EACH	8		
265	N.S	**SUSPENDED**				
		Providing and fixing signage made up of Modular Aluminium extrusions (Alloy 6060 as per European standards EN755-2-2008 tensile strength 190 MPa typical BHN is 70 from virgin aluminium homogeneous billet) with Premium grade Anodizing (Thickness 15-20 microns) as per International standards, with 10 years warranty under normal working conditions.Sign is double sided with 2 aluminium profiles connected with each other with 2 plastic moulded endcaps.Galvanised iron multistrand twisted 2 mm diameter wire (upto1.5 meter in length) with Stainless steel eco-suspension clips screw fitted directly in ceiling (rigid base) engaged with wire stainless steel eco suspension clips with wire adjustment mechanism.Sign is including all plastic injection moulded end caps black in shade which are directly press fitted ,media can be flat bed UV printed on panels/ profiles.MPI panels fitted and installed at site in plumb and level at specified location as per drawing to the satisfaction of the Architect and engineer-in-charge.				
		156X450MM	EACH	1		

266	N.S	**PROJECTED**				
		Providing and fixing signage made up of Modular Aluminium extrusions (Alloy 6060 as per European standards EN755-2-2008 tensile strength 190 MPa typical BHN is 70 from virgin aluminium homogeneous billet) with Premium grade Anodizing (Thickness 15-20 microns) as per International standards, with 10 years warranty under normal working conditions.Sign is double sided with 2 aluminium profiles connected with each other with 2 plastic moulded endcaps.Sign is including all plastic injection moulded end caps black in shade which are directly press fitted media (vinly) warapping by virtue of design of profiles. One end cap screw fitted with wall (rigid base) .Media can be flat bed UV printed on panels/ profiles . MPI panels fitted and installed at site in plumb and level at specified location as per drawing to the satisfaction of the Architect and engineer-in-charge.				
		125X300MM	EACH	3		
267	N.S	**TABLE STAND**				
		Providing and fixing signage made up of Modular Aluminium extrusions (Alloy 6060 as per European standards EN755-2-2008 tensile strength 190 MPa typical BHN is 70 from virgin aluminium homogeneous billet) with Premium grade Anodizing (Thickness 15-20 microns) as per International standards, with 10 years warranty under normal working conditions.Sign is double sided with 2 aluminium profiles connected with each other with 2 plastic moulded traingular shaped endcaps.Sign is including all plastic injection moulded end caps black in shade which are directly press fitted media (vinly) warapping by virtue of design of profiles. .Media can be flat bed UV printed on panels/ profiles .MPI panels fitted and installed at site in plumb and level at specified location as per drawing to the satisfaction of the Archtect and engineer-in-charge.	EACH	3		

268	NS	**EXTERNAL LETTERS & LOGO**				
		Providing & fixing Arcylic letters with LED strip light with one year warranty , letters shall reflect comapany's name " ECGC" in Hindi and English language within the size 2'-0" (600mm) x7'-0"(2100mm) , and Logo of size - 2'-0" (600mm)x 3'-0"(900mm) .Logo and letters shall be fitted and installed at site in plumb and level at specified location given by ECGC and as per given drawings/design and to the satisfaction of the Archtect and Engineer-in-charge.	SQM	1.858		
		DUST BIN				
269	N.S	Providing and supplying Dust Bins SS 304 (0.4 mm) 9Ltr full perforated round bin with matt polished. (Size: -DIA - 8”X12”H)	EACH	11		
270	N.S	Providing and supplying Dust Bins made up of SS 202 30Ltr Plain pedal bin with mirror polished (0.5 mm Shell / 0.7 mm Lid cover & Bottom) (Size: DIA 12” X 18”H)	EACH	1		
		WHITE AND SOFT BOARD				
271	NS	Providing & fixing of white board of customised size 6' X4' White Ceramic matt coated at high temperature fused on steel Scratch resistant High durability and can be used projection screen.	EACH	1		
272	NS	Providing & fixing of soft board of size 2'x2', surface covered with durable fabric saruface easy to pin and remove notice and aluminium frame.	EACH	3		
		PLANTERS				
273	NS	Providing and supplying Porcelain and single polymer Linear low-density polyethylene (LLDPE) (ROTOMOULD GRADE)-Apple Pot 6” size.	EACH	2		

274	NS	Providing and supplying Porcelain and single polymer Linear low-density polyethylene (LLDPE) (ROTOMOULD GRADE)-Pearl Pot 6” size	EACH	2		
275	NS	Providing and supplying Porcelain and single polymer Linear low-density polyethylene (LLDPE) (ROTOMOULD GRADE)- Square Height 18”	EACH	6		
276	NS	Providing and supplying Porcelain and single polymer Linear low-density polyethylene (LLDPE) (ROTOMOULD GRADE) - Round Height 18”	EACH	4		
277	NS	Providing and supplying Porcelain and single polymer Linear low-density polyethylene (LLDPE) (ROTOMOULD GRADE) - Verona Diamond 15"	EACH	6		
278	NS	Providing and supplying Porcelain and single polymer Linear low-density polyethylene (LLDPE) (ROTOMOULD GRADE) - Round 6” size.	EACH	1		
279	NS	SUPPLY OF LED FIXTURE 33-36W LED LUMINAIRE 600X600 MM DOWN LIGHT, SQUARE SHAPE EXTRUDED ALUMINIUM HOUSING , HIGH EFFICACY , > 100 L/W , INGRESS PROTECTION IP20, CRI>80 , PF>0.90, THD < 10 % , BLACK / WHITE FINISH. Make Philips/Jaquar/Wipro	Each	8		
280	NS	SUPPLY OF LED FIXTURE 33-36W LED LUMINAIRE 600MM RING SHAPE SUSPENDED , EXTRUDED ALUMINIUM HOUSING , HIGH EFFICACY > 100 L/W , INGRESS PROTECTION IP20, CRI>80 , PF>0.90, THD < 10 % , BLACK / WHITE FINISH. Make Philips/Jaquar/Wipro	Each	1		

281	NS	SUPPLY OF LED FIXTURE 33-36W LED LUMINAIRE 600MM HEXA SHAPE SUSPENDED FULL /RING GLOW, EXTRUDED ALUMINIUM HOUSING , HIGH EFFICACY , > 100 L/W , INGRESS PROTECTION IP20, CRI>80 , PF>0.90, THD < 10 % , BLACK / WHITE FINISH.Make Philips/Jaquar/Wipro	Each	1		
282	NS	SUPPLY OF LED ERIS SURFACE LIGHT SQUARE DESIGNER LIGHT, 30W COB SURFACE ALUMINIUM DIE COST HOUSING , GOLD FINISH REFLECTOR , BEAM ANGLE 30 DEGREE , INGRESS PROTECTION IP20, CRI>80 , PF>0.90, THD < 10 % , BEAM ANGLE , BLACK /WHITE FINISH.Make Philips/Jaquar/Wipro	Each	10		
283	NS	SUPPLY OF 32W LED LINEAR SUSPENDED /HANGING LIGHT EXTRUDED ALUMINIUM HOUSING , LENGTH FOUR /FIVE FEET, SIZE 1200-1500MM, HIGH EFFICACY > 100 LM/W , INGRESS PROTECTION-IP20, 4000K , CRI > 80, PF >0.95 ,THD < 10%, SIZE -50X80MM , BLACK / WHITE FINISH.Make Philips/Jaquar/Wipro	Each	6		
284	NS	Magnetic Track One Meter Surface / Hanging Mounted , Inpout Voltage - 220-240V AC. Make Philips/Jaquar/Wipro	Each	8		
285	NS	Magnetic Track Two Meter Surface / Hanging Mounted , Inpout Voltage - 220-240V AC. Make Philips/Jaquar/Wipro	Each	4		
286	NS	Magnetic Track Light 18W ORELLI Slim 24 Degree , 48V Operating Voltage , Black Finish , 4000K CCT. Make Philips/Jaquar/Wipro	Each	8		

287	NS	Magnetic Track Light (Linear Fixed Type) 18W Slim Linear With Lens, 24 Degree , 48V Operating Voltage , Black Finish , 4000K CCT .Make Philips/Jaquar/Wipro	Each	4		
288	NS	Magnetic Light (Linear Tiltable Type) 12W Instaray Slim Light Tiltable Type, 24 Degree , 48V Operating Voltage , Black Finish , 4000K CCT.Make Philips/Jaquar/Wipro	Each	4		
		ACCESSORIES				
289	NS	LED Magnetic Track Driver 48V 100W.Make Philips/Jaquar/Wipro	Each	1		
290	NS	LED Magnetic Track Driver 48V 50W.Make Philips/Jaquar/Wipro	Each	8		
291	NS	Hanging Wire For Surface Mounted Magnetic Track Hangwire MAGT.	Each	8		
292	NS	Magnetic Track I Shape Connector.	Each	8		
293	NS	Magnetic Track Channel Fixed Jointer .	Each	8		
Total cost of Non DSR Item						
Total cost of (DSR+Non DSR Item)						

ANNEXURE – K

SCOPE OF WORK

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

1.INTERIOR FURNISHING: False ceiling, wooden partitions, panelling, electrical work, door, cabinet, AHU, Ducting etc., partitions, glazed door, flush door, , tables and counters, storage cupboards unit, cabinet, overhead storage, mobile compactors storage, locker cabinet, sofa, chairs, company logo, ,roller blinds, auto sanitizer dispenser, refrigerator, water dispenser, microwave, hot case, wall clock, signage, etc.

2. ELECTRICAL:

Electrical work including all Low & Medium Voltage, Sub Distribution Panels, Distribution Boards, Raceways and Cable Trays, Cables, Mains & Sub Mains, Earthing, Point Wiring, Telephone, Computer, T.V. System, Lighting/ Fixtures, Addressable Fire Alarm and Pa System, fire extinguishers cylinders, CcTv, Access Control System, Fire Fighting System, Screen, IP -PBX system, Ups, networking, conduiting, etc.

3. HEATING VENTILATION & AIR CONDITIONING (HVAC):

HVAC Work Including Outdoor Unit, Indoor Unit,of split packaged airconditioners Hi- Wall Type Indoor, Clean Air Filter/Central Controller Refrigerant piping,MS Stand, Control Cable, Air Distribution, Duct Damper, Grills, Air Diffusers, Thermal Insulation, Louvers, etc.

Contractor shall maintain open format drawing and person at site, to incorporate updates from site working conditions

ANNEXURE - L

CODE OF INTEGRITY

DECLARATION

I/We _____(name of the authorized signatory) working as _____ (designation) with (the name and address of the firm/Company in full be mentioned), hereby solemnly affirm and declare that I have been authorized by the above-mentioned firm/Company to sign the tender documents/bids. I, hereby declare and certify, on behalf of the firm/Company, that we have accepted all the terms & conditions entioned in the ……and we shall abide by all the terms & conditions of RFT/Draft contract.

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

I/we further declare that in relation to my/our Bid submitted to ECGC, in response to RFT Ref. No. **ECGC/Indore/Admn/P/2026/1** ,I/we…….hereby undertake that I/we shall abide by the Code of Integrity and make disclosure as to any Conflict of Interest at all times, and understand that any breach of the Code of Integrity will render me/us liable to be removed from the list of registered bidders, and would also subject me/us to other punitive and penal action such as cancellation of contracts, banning, debarring and blacklisting or action in the court of Law, and so on.

Signature of Authorized Signatory of the firm with Seal & Stamp

Date: Place:

Name:

Designation: