May 14, 2025

MAYOOR SCHOOL, AJMER

1. This is with reference to the tender for Civil, Electrical and Fire Fighting Works for Construction of Primary School Second Floor at Mayoor School, Alwar Gate, Ajmer.

2. Time for completion of the project will be 24 months from the date of acceptance of tender.

3. Tender fees of ₹500/- (Non-refundable) in cash and earnest money 2% of the quoted rate i.e. ₹8,00,000/- needs to be deposited in the form of DD in favour of Principal, Mayoor School, Ajmer at the time of submission of the tender failing which tender will not be considered for bid. Tender will be available for download on Mayoor School Website www.mayoorschool.org from 15 May – 20 May 2025 at 5:00p.m.

4. In case of any query, you may contact Mr. Vijay Matange, Architect on the number 9810626130 and email id vinyas.arch@gmail.com or Mr. Vijendra Singh Tanwar, Junior Engineer, Mayoor School, Ajmer on mobile number 9680046651 and email id office@mayoorschool.org between 10:00 am to 4:00pm.

5. Tender should be addressed to Principal, Mayoor School, Ajmer and submitted in sealed envelope by 10:00am on 21 May 2025 at the Administrative Office, Mayoor School, Ajmer delay in the submission of the tender would render the bid invalid.

6. Duly submitted tenders will be opened at Administrative Block/Office of the Secretary General, MCGC on 21 May 2025 at 11:30am.

Sd/-
(PRINCIPAL)

INDEX

SECTION - 1

NOTICE INVITING TENDERS

1 Sealed Item Rate Tenders are invited in the prescribed form by the Principal, Mayoor School, for the following:

Tender No.	Name of Work	Estimated Value (in Rupees)	Earnest Money (in Rs.)	Time of Completion (in months)
MS/Pr. Schl 1/2025	**Construction of Primary School SECOND FLOOR at Mayoor School, Ajmer**	**Rupees Four Hundred Lakhs**	**Rs.8.0 Lakhs (Rupees Eight Lakhs)**	**24 Months**

2 Eligibility: The following eligibility criteria shall be complied to fulfill the Qualification Bid

a) Average annual financial turnover in building construction in the last three years should be at least 30% of the value of work as on the last completed financial year (Please furnish the provisional balance sheet for the year, if not audited).

b) During last seven years (ending on March 31st of the last completed Financial Year) should have successfully completed either

(i) Three similar works each not less than 40% value of respective work (or)

(ii) Two similar works each not less than 50% value of respective work (or)

(iii) One similar work not less than 80% value of respective work.

3 The works, as detailed in this tender, shall be executed and completed in all respects within a period of from the date of the written order to commence the work in accordance with the Tender Documents, Instructions to Tenderers, General & Special Conditions of Contract, Bill of Quantities and Drawings to the satisfaction of the Architect.

4 The Tenderer is required to deposit **Rs.8.0 Lakhs (Rupees Eight Lakhs)** as earnest money along with the tender in the form of Bank Draft on Ajmer Branch of any Nationalised Bank in favour of the **PRINCIPAL, MAYOOR SCHOOL, AJMER**. The tender which is not accompanied with Earnest Money shall be summarily rejected. The earnest money of unsuccessful Tenderer(s) will be returned to the Tenderer if his tender is not accepted but without any Interest/Bank Commission/ Collection Charges within **30** days from the date of acceptance/finalisation of the tender.

5 Tender Documents can be obtained on ..... from the Office of Principal, Mayoor School,, during the Office Hours on payment of **Rs.....**
(Rupees .....) in cash.

6 Tenders in prescribed form duly accompanied with Earnest Money should be submitted in sealed cover superscribed with the name of the work and must reach the office of the Principal, Mayoor School, Ajmer**, latest by 10.00 hrs on .....**

7 The Tenders shall remain valid for a period of **90 days** from the date of opening of tender.

8 The total amount of Security Deposit shall be 10% (Ten percent) of the total value of the contract for the work.. The Earnest Money deposited shall be converted as initial Security Deposit in the case of successful tenderer. The balance of the Security Deposit would be made up by deduction of 10% (Ten percent) from the amount of each running/on account bill for the work done under the contract after adjusting initial deposit as mentioned earlier. No interest shall be paid on the said Security Deposit.

9 The Earnest Money of the successful tenderer shall be forfeited in the event of refusal or delay on his part in signing the Agreement within **7 days** of the of letter of award of the contract or refusal to start the work on instructions from the Architect/Engineer.

10 The Principal, Mayoor School, does not bind itself to accept the lowest or any Tender and reserves to itself the right to negotiate, accept or reject any or all the tenders either in whole or in part without assigning any reasons for doing so. Principal, Mayoor School, can bifurcate the works seeing the feasibility of execution/ early completion of works.

SECTION – 2

INSTRUCTIONS TO TENDERERS

2.1 The tenderers shall examine carefully all the tender documents consisting of:

a) Notice inviting tenders;
b) Instructions to tenderers;
c) Tenderer's forwarding letter
d) Form of Agreement;
e) General and special conditions of contract;
f) Technical specifications
g) Drawings
h) Bill of quantities/Tender Schedule

The tenderer is advised to visit and inspect the site at his own cost and responsibility and to secure all necessary information which may be required for completing the work. Ignorance of site conditions or local information shall not be considered as an excuse for non-performance of the contract. All costs, charges and expenses that may be incurred by the Tenderer in connection with preparation of his tender shall be borne by him and Principal, Mayoor School, will not accept any liability whatsoever in this regard.

2.2 Time is the essence of the contract and the Tenderers are required to complete the work in all respects within **24 Months** from the date of issue of letter of intent/order and hand over the same complete in all respects to the satisfaction of Architect.

2.3 The Tenderer shall use only the Form issued with this tender to fill up the rates.

2.3.1 Every page of the tender shall be signed on the left hand side bottom corner and any tender not so complied with is liable to be treated as defective.

2.3.2 The Tender Form must be filled in English and all entries must be made by hand in ink. If any of the documents is missing, or unsigned, the tender is liable to be treated as defective tender.

2.3.3 Tenders not properly filled, mutilated with incorrect calculations or generally not complying with the conditions are liable to be rejected.

2.3.4 Any erasures and alterations made while filling the tender must be attested by initials of the Tenderer. Over-writing of figures is not permitted. Failure to comply with either of these conditions will render the tender liable for rejection.

2.4 A schedule of approximate quantities for various items accompanies this tender. It must be definitely and clearly understood that this schedule is liable to alteration by omissions, deductions or additions to any extent at the discretion of Principal, Mayoor School, without affecting the terms of the contract.

2.4.1 The scope of work may be reduced or increased either side due to variation in the space required to be constructed.

2.4.2 It shall be clearly understood that the rates quoted in the tender are for complete work at site as per Instructions to Tenderers, Conditions of Contract, Specifications, Schedule of Quantities and drawings, addenda referred to therein and also for all such works as are necessary for the proper completion of the contract.

2.4.3 The tender should contain not only the rates but also the value of each item of work entered in the prescribed column of the schedule of quantities and all the items should be totaled up in order to show the aggregate value of the entire tender. The rates quoted by the Tenderer should be expressed accurately both in words and figures so that there is no discrepancy. The item rates quoted by the Tenderer in words and figures (whichever are lower) will be the basis (and not the amounts in case of discrepancies) in finalising the tender.

2.4.4 No alteration which is made by the tenderer in the Notice of Tender, Instructions to the Tenderer, Agreement Form, General and Special Conditions of Contract and Drawings, etc. accompanying the same shall be recognised, and if any such alterations are made, the tender is liable to be rejected.

2.5 The tender for the work shall remain open for acceptance for a period of **7 days** from the date of opening of the tender. If any tenderer withdraws his offer before the said period or makes any modifications in the terms and conditions of the tender, then Principal, Mayoor School, shall, without prejudice to any other right or remedy, be at liberty to forfeit the Earnest Money of the tenderer.

2.6 The Principal, Mayoor School, does not bind itself to accept the lowest or any tender and reserves to itself the right to accept or reject any or all the tenders/offers either in whole or in part without assigning any reasons for doing so.

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

2.8 **Rates must be quoted for complete work at site. The rates shall include the impact of Royalty, Toll Tax, Excise duty, Goods and Service Tax including adjustment of the set-off against GST availed, Labour Welfare Cess or any other taxes levied or leviable by Central or State Governments or by any local Authorities/Bodies. No part of such taxes on contractor's labour or material shall be paid by the Employer who shall not entertain any claim whatsoever in this regard. Decision of the Employer in this regard shall be final and binding. GST at prevalent rate will be paid over and above value of work. Necessary documentation with regard to GSTIN and proof of deposit of GST and Labour Cess may be required by the school before the GST and Labour Cess components of the bill(s) are released.**

2.8.1 Any new tax or any increase in rates of levies/taxes on the finished work introduced by Central or State Government or by any local authorities after the opening of the tender, shall be reimbursed to the contractor only on production of certificates from concerned authorities with authenticated documents to the fact that the same has already been deposited by the contractor. The contractor shall also be required to submit undertaking for any kind of liability of the labour engaged in this project. Any abolition of tax or decrease in rates of levies/taxes on the finished work introduced by Central or State Government or by any local authorities after the opening of the tender, shall be recovered by Principal, Mayoor School, from running/on-account bills of the Contractor.

2.9 The contractor's operations and proceedings in connection with the work shall at all times be conducted during the continuance of the contract in accordance with the laws, ordinance, rules and regulations for the time being in force and the contractors shall further observe and comply with the bye-laws and regulations of the Government of India, State Government and Municipal and other authorities having jurisdiction over the area involved in connection with the works or

site and over operations such as those as carried out by the contractor and shall give all notices required by such bye-laws and regulations.

2.10 The Agreement for this acceptance shall be executed on a non-judicial stamp paper of requisite value for which the stamp duty shall be borne by the Contractor.

2.11 Deduction towards Income Tax and works tax as per rules shall be made by Employer from the contractor's bills.

2.12 **Unknown/Indefinite Liabilities:**
Tenders containing any conditions leading to unknown/indefinite liabilities are liable to be rejected. If at all any rebate(s) is/are to be offered, the Tenderer shall first quote his rates strictly on the terms and conditions stipulated in the tender documents and then show separately any rebate(s) offered specifying the conditions for such rebate(s), if any.

2.13 List of documents to be submitted with the tender:-

(i) Tender with earnest money in sealed cover, superscribed "Tender for **Construction of Primary School SECOND FLOOR at Mayoor School, Ajmer** should reach the Principal, Mayoor School, not later than **10.00 hrs on .....** Principal, Mayoor School, shall not accept any loss or delay in transit as an excuse for delayed/late tendering.
(ii) Tender documents will be submitted along with detailed programme and targets of completion of each item of work.
(iii) Details of deployment of manpower, machinery, plant and equipment.
(iv) Income Tax Clearance Certificate
(v) Partnership Deed and Articles of Association etc. as applicable.
(vi) Power of Attorney
(vii) List of works executed in last three years of value more than Rs. Fifty Lakhs with following details:

Name of Work	**Value of Work**	**Client's Name and address**	**Period of Construction**	
			As per Contract	**As executed**

Note: The client's certificate of completion of works in each case shall be furnished.

(viii) List of all works in hand irrespective of monetary limit with following details:

Name of Work & Client's Name and address	Value of Work	Work Completed Upto 31.03.2025 (Financial Value)	Anticipated outlay 2025-26	Anticipated outlay 2026-2027

Note: The client's certificate of award of the works & work completed in each case shall be furnished.

(ix) Turnover of the firm in last 3 years, duly supported by I.T.C.C. (Attested copies) or any other document acceptable, for year (x) Solvency certificate from banker for last one year.

(x) Details of registration with State Government and Semi-Government authorities with documentary proof.

(xi) Arbitration cases, if any, during last three years.

(xii) Any other information tenderer wants to give.

2.14 **MODE OF SUBMISSION OF TENDER**

The tenderer are required to submit their offer in the following manner:

1. Envelope marked "Number 1 – Earnest Money" shall contain the Earnest money deposit

2. Envelope marked "Number 2 –Techno-commercial Bid" shall contain technical data or other information as stated below:
   (i) Covering letter to the tender
   (ii) Any comments which the tenderer desires to make in the form of a statement, as brief as possible and with proper reference to the items, clauses and pages of the tender documents to which the comments pertains.
   (iii) Documents as per **clause 2.13.**
   (iv) Book-let superscribed "**Tender documents – Part-I "Construction of Primary School SECOND FLOOR at Mayoor School, Ajmer".**

3. Envelope marked "Number 3 – Price Bid" shall contain only the price bid on the tender booklet superscribed "**Tender documents - Part-II (Price-Bid) "Construction of Primary School SECOND FLOOR at Mayoor School, Ajmer**", in a prescribed manner and must be sealed.

4. Envelopes marked number 1, 2 and 3 shall be put in a large envelope of adequate size. It shall be sealed and marked to the Principal, Mayoor School,. The full name and address of the Tenderer and the name of the work shall be written on the cover.

2.15 ACCEPTANCE OF TENDER

Principal, Mayoor School, reserves the right to reject any or every tender without assigning any reason whatsoever and or to negotiate with the tender(s) in any manner the Principal, Mayoor School, considers suitable.

SECTION – 3
(Covering Letter to the Tender)

FROM
M/s …..

Date:

To,
Principal,
Mayoor School,
Ajmer

Ref: Construction of Primary School SECOND FLOOR at Mayoor School, Ajmer.

Dear Sir,

With reference to the tender invited by you, I/We hereby offer to perform, provide, execute and complete the works in conformity with the conditions of contract, drawings and specifications for the respective items of schedule of quantities attached hereto.

1. I/We have satisfied myself/ourselves as to the location and prevailing conditions of the site, and have read carefully the tender booklet(s) containing Articles of Agreement, conditions of Contract, Specifications, General and Special Conditions, Drawings etc. and I/We understand that the works are to be completed within **24 Months** from the date of issue of Letter of Intent/Order and fully understand that the time will be the essence of the contract.

2. I/We enclose a demand draft for **amount of Rs. _____/- (Rupees _____ only) as per clause no. 1.3 of Notice Inviting Tenders,** drawn on _____ _____, payable in favour of _____ as Earnest Money and fully understand that this amount will not bear any interest.

3. I/We agree to keep the offer open for **15 days** from the date of opening of the tender.

4. Should this tender be accepted in whole or in part, I/We hereby agree to abide by and fulfill all the terms and conditions annexed hereto. If I/We fail to commence the work specified in tender documents, I/We agree that my/our earnest money shall stand forfeited absolutely to the Employer otherwise the said Earnest Money shall be retained by the Employer towards Security Deposit (retention money). I/We also agree to the balance security money being deducted from my/our bills in accordance with the conditions of contract.

5. All the terms and conditions contained in the Notice Inviting Tenders, General & Special Conditions of Contract, Specifications, for execution of work and additional conditions and the Agreement etc. constituting the tender documents have been fully read by me/us and explained to me/us and I/We hereby accept the same and sign hereunder in token of their acceptance.

6. We are further enclosing herewith the following documents:
   (i) Partnership deed, Articles of Association and Power of Attorney. We agree that no change will be made in these documents without prior approval of Principal, Mayoor School,.
   (ii) Tender Documents duly signed along with detailed programme and targets of completion of each item of work.

(iii) Details of deployment of manpower, machinery, plant and equipment. Total list of plant and machinery in possession of the firm and the list of plant and machinery which will be exclusively deployed on this work.

(iv) Latest Income Tax Clearance Certificate.

(v) Draft No. _____ dated __**.**__**.20**__**.** drawn on _____.

(vi) Name of Proprietor/Director/Partners of the firm: …..... …..

Yours Faithfully

Name and Signature of Tenderer

M/s …..

…..

Office stamp & seal of Tenderer(s)

Date: _____
Witness: _____
Address: _____
_____
Occupation: _____

SECTION – 4

ARTICLES OF AGREEMENT

Articles of agreement made this day ____ of _____**20__** between Principal, Mayoor School, having its registered office at _____ (hereinafter referred to as "Employer" which expression shall mean and include its successor in office executor, administrator assignees) of the one part and **M/s** _____ having its office at _____, hereinafter referred to as "contractor", which expression shall include his heir, executor, administrator and assignees) of the other part. Whereas the Employer is desirous of getting **Construction of Primary School SECOND FLOOR at Mayoor School, Ajmer** and has caused drawings, specifications and schedule of quantities describing the works to be done, to be prepared by the Employer and whereas the said drawings issued by the Employer from time to time, and notice inviting tenders, instructions to Tenderers, general and special conditions of contract, technical specifications and schedule of quantities have been signed by or agreed to execute upon and subject to the conditions set-forth herein (hereinafter referred to as the said conditions) and the Special Conditions and specifications of the work shown upon the said drawings and/or described in the said specifications and included in the said schedule of quantities at rates therein set-forth amounting to the sum of **Rs.** _____ (**Rupees** _____ only) hereinafter referred to as "the said contract amount". And whereas the contractor has deposited with the Employer the sum of **Rs. ….. (Rupees..... ….. …. ….....only)** as the earnest money which shall become part of security deposit to be retained until the expiry of the defects liability period for the due observance and performance of this contract.

Now it is hereby agreed as follows:

1. In consideration of the said contract amount to be paid at the times and in the manner set-forth in the said conditions, the contractor shall, upon and subject to the said conditions execute and complete the work shown upon the said drawings and described in the said specifications and/or the schedule of quantities and other conditions and within **24 Months** of the date of commencement of the work the latest day by **__ . __ . 20__.**

2. The commencement of work will be taken as the date of issue of the letter of intent/order for award of the contract.

3. The contractor clearly understands that the time is the essence of the contract, and penalty will be imposed for delay in execution of the work, as per terms of the contract.

4. The Employer shall pay to the contractor the said contract amount or such other sum as shall become payable at the times as hereinafter specified in the conditions.

5. The following documents shall be deemed to form and be read and construed as part of the agreement along with the amendments, negotiated and confirmed in various subsequent letters exchanged as mentioned hereinafter.
   (i) Notice inviting tenders;
   (ii) Instructions to tenderers;
   (iii) General and special conditions of contract;
   (iv) Technical specifications;
   (v) Schedule of quantities;

6. Employer's letter No. _____ dated _____ to the contractor for awarding the contract.

7. Contractor's letter No. _____dated _____ to the Employer in acceptance of the award of contract.

8. Drawings

Parties hereto shall respectively abide by submitting themselves to the conditions and perform the agreement on their part respectively in such conditions contained.

As witness our hands this _____day of _____**20__.**

1. Signed by the said

Employer (First Party)
_____
_____
Principal, Mayoor School,

In the presence of
_____

Address

_____
_____

2. Signed by the said

Contractor (Second Party)
M/s _____
_____
_____

In the presence of
_____

Address

_____
_____

SECTION - 5

GENERAL CONDITIONS OF CONTRACT

I. Definitions and interpretations
II. General obligations
III. Execution of works
IV. Variations in extent of contract
V. Measurements, Certificates and Payments
VI. Labour
VII. Claims
VIII. Determination of Contract
IX. Settlement of Disputes

I. Definitions and Interpretations

5.1. Definitions : In these general conditions of contract, the following terms shall have meaning hereby assigned to them except where the context otherwise requires :

a) "Employer" shall mean the Principal, Mayoor School, or any other Committee/representative acting on his behalf and includes their authorized representative to deal with any matters on their behalf.

b) “Engineer" shall mean "Chief Project Manager" who shall be accredited representative of the Employer at site.

c) "Engineers representative" means any Engineer or assistant appointed from time to time by the Employer.

d) "Architect" means, appointed by the Employer or their representative to act on their behalf in connection with the execution of the project.

e) "Contractor" shall mean the persons or company whether incorporated or not who enter into the contract with the Principal, Mayoor School, and shall include their heirs, executors, administrators, successors and permitted assignees.

f) "Contract" shall mean and include the notice inviting tenders, the letter of intent, the agreement and work order, the accepted schedule of rates and quantities, the general conditions of contract, special conditions of contract, drawings and specifications (if any) including all the modifications thereof incorporated in their execution.

g) "Works" shall mean the works to be executed in accordance with the contract.

h) "Specifications" shall mean the standard specifications for works and materials of the Employer and specifically brought out in the notice inviting the tender, as amplified added to, or superseded by special specifications and embodied in the contract. In absence of any specifications for any item of the work, the relevant specifications in PWD BSR Ajmer Circle and IS Code shall be followed in that order and work shall be executed accordingly.

i) "Drawings" shall mean the maps, drawings, plans and tracing or prints thereof annexed to the contract and shall include any modification of such drawings and further drawings as may be issued by the Architect from time to time.

j) "Constructional Plant" shall mean all appliances or things of whatsoever nature required for the execution, completion or maintenance of the works or temporary works (as hereinafter defined) but does not include materials or other things intended to form or forming part of the permanent work.

k) "Temporary Work" shall mean all temporary works of every kind required for the execution, completion or maintenance of the works.

l) "Site" shall mean the lands and other places on, under, in or through which the works are to be carried out and any other lands or places provided by Principal, Mayoor School, for the purpose of the contract.

m) "Period of maintenance" shall mean the specified period of maintenance from the date of completion of the works, as certified by the Architect/Engineer.

n) "Hindrance Register" shall mean the register maintained at the site of work showing the item affected, the date on which the delay occurred and the date on which the delay was cleared and reason for delay. These entries shall be signed by the contractor, Employer/Engineer or their authorised representative.

o) "Virtual Completion" : Virtual completion shall mean that the works are completed in all respects and fit for use in every respect including installation of all services complete in working order to the full satisfaction of the Architect and the Owner .

p) Definitions of Time
   i. "A day" shall mean a day of 24 hours from midnight to mid-night irrespective of number of hours worked in that day.
   ii. "Normal working hours" shall mean 9 (nine) hours per day. The specific timing would vary depending upon the season.
   iii. "A week" shall mean 7 (seven) days without regard to the number of hours worked in any day in that week.
   iv. "A Month" shall mean a calendar month without regard to the number of days in that month.

5.1.1 "Singular and Plural" words imparting the singular number shall also include the plural and vice versa where the context so requires.

5.1.2 "Headings and marginal headings":-
The headings and marginal headings in these general conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.

II. GENERAL OBLIGATIONS

5.2 **Intent & Scope of Contract:**

5.2.1 The intent of the contract is that the Contractor shall provide a work/building and/or systems in complete functioning order and all work or materials necessary for the above intent shall be deemed to be included and all items will be paid for at the rates established in the Contract.

5.2.2 The Contractor shall supply at his own cost all materials, plants, tools, appliances, implements, ladders, cordage, tackles, scaffolding, shuttering and temporary works required for the proper execution of the work whether original, altered or substituted and whether included in the specification or other documents forming part of the contract or referred to in these conditions or not or which may be necessary for the purpose of satisfying the conditions or as directed by the Engineer or his representatives at the site of work.

5.2.3 The Contractor shall also provide all necessary fencing and lights required to protect the public from accident, and shall be bound to bear the expenses of defense of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to the neglect of the above precautions and to pay any damages and costs which may be awarded in such suits, actions or proceedings to any such persons or which may with the consent of the Contractor be paid to compromise any claim by any such person. In no case, the Employer shall be a party to any such claim/claims.

5.2.4 **Sufficiency of tender:**
The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his Tender for the work and of the prices stated in the schedule which shall except in so far as it is otherwise provided in the contract, cover all his obligations under the contract and all matters and things necessary for the proper completion, functioning and maintenance of the work.

5.2.5 **Law Governing the Contract:**
The Contract shall be governed by the law for the time being in force in the country. The Contractor when called upon to do so shall enter into and execute the Contract Agreement with the Employer. The Contract Documents are complimentary and what is called for by any one shall be binding as if called for by all.

5.2.6 **Compliance to Regulations and Bye-Laws:**
The Contractor shall conform to the provisions of any Statutes relating to the works and Regulations and Bye- Laws of any local authority and of any water and lighting companies or undertakings with whose system the work is proposed to be connected and shall before making any variations from the drawings or the specifications that may be necessitated by so conforming, give to the Engineer notice specifying the variations proposed to be made and the reasons for making the variations and shall not carry out such variation until he has received instructions from the Engineer in respect thereof. The Contractor shall be bound to give all notices required by statutes. Regulations or Bye-Laws as aforesaid and to pay all fees and taxes payable to any Authority in respect thereof.

5.2.7 **Communications to be in writing:**
All notices, communications references and complaints made to Employer or the Engineer or the Engineer's representative or the Contractor concerning the works shall be in writing and no notice, communication, reference or complaint not in writing shall be recognised.

5.2.8 **Service of notice on Contractor:**
The Contractor shall furnish to the Engineer the name, designation and address of his authorized agents and all complaints, notices, communications and references shall be deemed to have been duly given to the Contractor if delivered to the Contractor or his authorised agents or left at or posted to the address so given and shall be deemed to have been so given in the case of posting on the day on which they would have reached such address in the ordinary course of post or on the day on which they were so delivered or left.

5.2.9 **Constitution of Firm:**
The Tenderer(s) who is/are constituents of the Firm, Company, Association or Society must forward attested copies of the constitution of their concern, partnership deed and power of attorney with their tender. Tender Documents in such cases are to be signed by such person as may be legally competent to sign them on behalf of the Firm, Company, Association or Society as the case may be. Co-operative societies must likewise submit an attested copy of their certificate of registration along with the documents as aforementioned. EMPLOYER will not be bound by any power of attorney granted by the Tenderer(s) or by changes in the composition of the Firm made subsequent to the execution of the Contract. EMPLOYER may, however, recognise such power of attorney and changes after obtaining proper legal advice, cost of which will be chargeable to the Contractor. If the Tenderer expires after the submission of his tender or after the acceptance of his tender, EMPLOYER shall deem such Tender/Contract as cancelled. If a partner of firm expires after the submission of their tender, EMPLOYER shall deem such tender as cancelled unless the firm retains its character. If the Contractor's firm is dissolved on account of death , retirement of any partners or for any reason whatsoever, before fully completing the whole work or any part of it, undertaken by the Principal Agreement, the surviving partners shall remain jointly/severely and personally liable to complete the whole work to the satisfaction of EMPLOYER due to such dissolution. The cancellation of any documents such as power of attorney, partnership deed, etc. shall forthwith be communicated to EMPLOYER in writing, failing which EMPLOYER shall have no responsibility or liability for any action taken on the strength of the said documents.

5.2.10 **Occupation and use of land:**
No land belonging to or in possession of EMPLOYER shall be occupied by the Contractor without the permission of EMPLOYER. The Contractor shall not use, or allow to be used, the site for any purpose other than that of executing the works. The equipment and material shall be removed from the site after raising of the building structure so that land is available for the external development works. In **case of failure to keep the site clear as mentioned above a penalty @ Rs.50/- per sq.m. per month will be levied**, without prejudice to other rights and remedies.

5.2.11 **Assignment or sub-letting of Contract:**
The Contractor shall not assign or sublet the Contract or any part thereof or allow any person to become interested therein in any manner, whatsoever, without the special permission of EMPLOYER. Any breach of this condition shall entitle EMPLOYER to rescind the Contract under clause 5.8.2 (v) of these conditions and also render the Contractor liable for payment to EMPLOYER in respect of any loss or damage arising or ensuing from such cancellation. Provided always that execution of the details of the work by petty contractor under the direct and personal supervision of the Contractor or his agent shall not be deemed to be subletting under this clause. The permitted subletting of work by the Contractor shall not establish any contractual relationship between the sub-contractor and EMPLOYER and shall not relieve the Contractor of any responsibility under the Contract.

5.2.12 **Representation on works:**
The Contractor shall, when he is not personally present on the site of the works, place and keep a responsible agent at the works during working hours who shall on receiving reasonable notice, present himself to the Engineer and orders given by the Engineer or the Engineer's representative or Architect to the agent shall be deemed to have the same force as if they had been given to the Contractor. Before

absenting himself, the Contractor shall furnish the name and address of his agent for the purpose of this clause. Such agents shall not be changed and shall not leave during the duration of the Contract, unless the consent of the Engineer have been previously obtained. Any failure on the part of the Contractor to comply with this provision at any time will entitle EMPLOYER to levy a penalty of Rs.10,000/- per month or rescind the Contract under clause 5.8.2 of these conditions.

5.2.13 **Relics:**
All gold, silver, oil and other minerals of any description and all precious stones, coins, treasure, relics, antiquities and other similar things which shall be found in or upon the site shall be the property of EMPLOYER and the Contractor shall duly preserve the same to the satisfaction of EMPLOYER and shall from time to time deliver the same to such person or persons as EMPLOYER may appoint to receive the same.

5.2.14 **Excavated materials:**
The Contractor shall not sell or otherwise dispose of or remove except for the purpose of this Contract, the said stone, clay, ballast, earth, rock or other substances or materials which may be obtained from any excavation made for the purpose of the works or any building or produce upon the site at the time of delivery of the possession thereof but all such substances, materials, buildings and produce shall be the property of EMPLOYER provided that the Contractor may, with the permission of the Engineer, use the same for the purpose of the works either free of cost or pay the cost of the same at such rates as may be determined by the Engineer.

5.2.15 **Indemnity by Contractor:**
The Contractor shall indemnify and save harmless EMPLOYER from and against all actions, suits, proceedings, losses, costs, damages, charges claims and demands of every nature and description brought or recovered against EMPLOYER by reason of any act or omission of the Contractor, his agents or employees, in the execution of the works or in the guarding of the same.
All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of EMPLOYER without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

5.2.16 **Earnest Money and Security Deposit:**
Every Tenderer shall deposit along with his tender an Earnest Money as indicated in the Notice Inviting Tender in the form of Bank Draft payable at Ajmer Branch of any Nationalised Bank in favour of Principal, Mayoor School,. The Earnest Money deposited by the successful Tenderer shall be converted to form part of the Security Deposit to be paid by the successful Tenderer. In case the Tenderer withdraws his offer before the expiry of his validity period of 90 days or if the tender is accepted by EMPLOYER, but the Tenderer does not sign the necessary Contract Agreement within seven days of issue of letter of intent/order or refuses to start the work on instructions from Architect/Engineer, the Earnest Money so deposited, shall stand forfeited to EMPLOYER.

5.2.17 **Refund of Earnest Money :**
The Earnest Money of the unsuccessful Tenderer(s) shall be refunded without any interest/Bank Commission/Collection charges within **60 Days** of the acceptance/finalisation of the Tender.

5.2.18 **Payment of Security Deposit:**

(i) On receipt of the Letter of Intent/Order, the successful Tenderer shall pay Security Deposit on the scale mentioned thereunder for the due and faithful fulfillment of the Contract. The total amount of Security Deposit shall be 10% (Ten percent) of the total value of the contract for the work. The Earnest Money deposited shall be converted as initial Security Deposit in the case of successful tenderer. The balance of the Security Deposit would be made up by deduction of 10% (Ten percent) from the amount of each running/on account bill for the work done under the contract after adjusting initial deposit as mentioned earlier. No interest shall be paid on the said Security Deposit. However as soon as the Security Deposit so deducted from running/on account bills amounts to one half of the total security deposit due, the Contractor will, on production of a Bank Guarantee from any Nationalised Bank for an amount equal to one quarter of the total security deposit due valid till 30 days of expiry of maintenance period be entitled for a refund of an amount equal to one quarter of the total security deposit due. Thus keeping an amount equal to one quarter of the total security deposit due in cash as security deposit which shall be retained till 30 days of expiry of maintenance period Subsequent security deposit deducted from running/on account bills, i.e., balance of an amount equal to one half of the total security deposit due can be converted into two bank guarantees, each of an amount equal to one quarter of the total security deposit due, whenever the amount of security deposit deducted reaches an amount equal to one half of the total security deposit due. These two subsequent bank guarantees each of an amount equal to one quarter of the total security deposit due shall remain valid till three months of the completion of the entire work.

(ii) Alternatively, at the start of contract, contractor can furnish three bank guarantees from Nationalised bank, each equal to one quarter of the total security deposit due. Two bank guarantees should be valid till three months of the completion of the entire work and the other one should be valid till 180 days of expiry of maintenance period. In such cases, balance amount will be deducted from running on account bills towards security deposit only upto an amount equal to one quarter of the total security deposit due in cash, which shall be retained till 30 days of expiry of maintenance period.

5.2.19 **Refund of the Security Deposit:**

(i) On faithfully completion of the contract one half of the Security Deposit shall be refunded to the Contractor on completion of **180 days** of the completion of the entire work, subject to the issue of completion certificate by the Architect/Engineer. However, refund of part of the Security Deposit shall not relieve the Contractor from his obligations and liabilities to make good any defects, imperfections, shrinkage of faults which may appear during the period of maintenance specified in the Contract. In case Contractor has furnished Bank Guarantee(s), the Bank Guarantee(s), valid till three months of the completion of the entire work and amounting to one half of the Security Deposit will be released within 180 days of the completion of the entire work subject to the issue of completion certificate by the Architect/ Engineer.

(ii) The balance half of the Security Deposit shall become due and shall be paid to the Contractor after 30 days of the expiry of the period of maintenance, handing over of external development works to local authorities satisfactorily, and issue of certificate of completion comprising the whole of the works.

(iii) Provided always that no Security Deposit shall become due nor shall be payable to the Contractor unless all the stipulations of the Contract have been fulfilled by the Contractor and all claims and demands made against the Employer for and in respect of damages or loss by firm or in consequences of the works, but excluding the claims made by the Contractor on the Employer have been finally satisfied.

(iv) Security Deposit shall be liable to be forfeited by the Employer in the event of breach of Contract on the part of the Contractor, without prejudice to other rights and remedies.

(v) Security Deposit shall be liable to be forfeited by the Employer in the event of breach of Contract on the part of the Contractor, without prejudice to other rights and remedies.

5.2.20 **Interest on amount:** No interest shall be payable on the Earnest Money or the Security Deposit or any amount payable to the Contractor under the Contract, except as provided for under the Conditions of this Contract.

5.2.21 **Illegal gratification:**

Any bribe, commission, gift or advantage given, promised or offered by or on behalf of the Contractor or his partner, agent or servant or any one of his or on their behalf to any officer, or employee of EMPLOYER or to any person on his or their behalf in relation to obtaining or execution of this or any other Contract with EMPLOYER shall, in addition to any criminal liability which he may incur subject the Contractor to the rescission of the Contract and EMPLOYER shall be entitled to deduct the amounts so payable from any money due to the Contractor under the Contract or any other Contracts with EMPLOYER. The Contractor shall not lend or borrow from or have or enter into any monetary dealings or transactions either directly or indirectly with any employee of EMPLOYER and if shall do so, EMPLOYER shall be entitled forthwith to rescind the Contract and all other Contracts with EMPLOYER. Any question or dispute as to the commission of any offence or compensation payable to EMPLOYER under this clause shall be settled by the CEO , Principal, Mayoor School, in such manner as he shall consider fit and sufficient and his decision shall be final and conclusive.

5.2.22 **Time Limitation:**

The time allowed for execution of the works or part of works as specified in the Contract Documents in accordance with these conditions shall be the essence of the Contract. Subject to any requirement in the Contract as to completion of any portion or portions of the works before completion of the whole of the work, the Contractor shall fully and finally complete the whole of the work comprised in the Contract (with modifications as may be directed under conditions of this Contract) by the date entered in the Contract or extended date.

5.2.23 **Date of Commencement and Completion:**

The Contractor shall be allowed admittance to the site on the Date of commencement" stated in the Appendix, and he shall thereupon and forthwith begin the works and shall regularly proceed with to complete the same (except such painting or other decorative works as the Engineer may desire to delay) on or before the "Day of Completion" stated in the Appendix subject nevertheless to the provisions for extension of time hereinafter contained.

5.2.24 **Accepted Programme of Work:**
As soon as the work is awarded, but not later than 7 days after the date of issue of letter of intent, the Contractor shall submit a detailed programme of work in the form of CPM/ PERT Network, BAR charts indicating the time schedule for commencement and completion of various items of works and the organisation in labour, plant and machinery that he intends to utilise for execution of the works, and complete the same by the stipulated dates of completion. The programme of work amended as necessary after discussions with the Engineer shall be treated as agreed programme for the purpose of this Contract and Contractor shall endeavour to fulfil this programme of work. Nothing stated herein shall preclude the Contractor in achieving earlier completion of the individual items or whole of the work than indicated in this programme.

5.2.25 **Delays & the Extension of Time:**

i. If in the opinion of the Engineer, the works are delayed:
   (a) by force MAJEURE or
   (b) by reasons of any exceptionally inclement weather or
   (c) by reason of proceedings taken or threatened by or dispute with adjoining or neighbouring owners or public authorities arising otherwise than through the Contractor's own default or
   (d) by the works or delays of other Contractors or Tradesmen engaged by the Employer and not referred to in the schedule of Quantities and/or Specifications or
   (e) by reasons of Engineer's instructions or
   (f) in consequence of the Contractor not receiving in due time necessary instructions from the Engineer for which he shall have specifically applied in writing, the Employer shall make a fair and reasonable extension of time for completion of the Contract works.
   (g) by reasons of civil commotion, local combination of workmen or strike or lock out affecting any of the building traders. In case of such strike or lock out, the Contractor should give immediately written notice thereof to Engineer, but the Contractor shall nevertheless constantly use his endeavours to prevent delays and shall do all that may reasonably be required to proceed with the work to the satisfaction of the Engineer.

ii. The Contractor's right to an extension of time limit for completion of the work in the above mentioned cases is subject to the following procedures:
   (a) That, within 10 days after the occurrence of case of force MAJEURE but before the expiry of the stipulated date of completion, he informs the Engineer in writing that he considers himself entitled to an extension of the time limit.
   (b) That, he produces evidence of the date of occurrence and the duration of the force MAJEURE in an adequate manner by means of documents drawn up by reasonable authorities.
   (c) That, he proves that the said conditions have actually interfered with the carrying out of the Contract.
   (d) That, he proves that the delay incurred is not due to his own action or lack of action. In the cases mentioned above for delays in completion of works, such failures or delays shall in no way affect or vitiate the Contract or alter the character thereof or entitle the Contractor to damages or compensations thereof but the Contractor shall apply for extension of time at least 45 days before the completion of the Contract period and EMPLOYER shall grant such extension or extensions of the completion dates as shall appear to the Employer reasonable in the circumstances and his decision in the matter will be final and binding on the Contractor.

iii. In all other cases EMPLOYER may grant extension of time with penalty, liquidated damages and without escalation.

5.2.26 **Liquidated Damages for Delay:** The time and date stipulated in the Contract for the completion of the work or any part or stage thereof shall be deemed to be the essence of the Contract. The work shall, throughout the stipulated period of Contract, be carried out with all diligence. If the Contractor fails to complete the work within the time prescribed or within the extended time under the Contract, he shall pay to EMPLOYER on demand without prejudice to other rights and remedies, EMPLOYER may have against the Contractor, a sum of **0.5%** of the contract value per week or part thereof as liquidated damages for such default, and not as a penalty for every week or part thereof after the stipulated date of completion, provided that the total liquidated damages payable shall not exceed **5%** of the Contract value. EMPLOYER may, without prejudice to any other method of recovery, deduct the amount of such damages from any moneys due or which become due to the Contractor. The recovery or deduction of such damages shall not relieve the Contractor from any obligations and liabilities under the Contract. During this period of delay, no escalation of prices shall be payable viz., original quoted rates will be paid.

5.2.27 **Failure by Contractor to Comply with Engineer's Instructions:**
If the Contractor after receipt of written notice from the Engineer requiring compliance within ten days fails to execute such works as per drawings or as per Engineer's instructions, the Engineer may employ and pay other persons to execute any such work, whatsoever, that may be necessary to give effect thereto, and all costs incurred in connection therewith including loss, if any, shall be recoverable from the Contractor by the Engineer as a debit or may be deducted by him from any money due or to become due to the Contractor.

III. EXECUTION OF WORKS

5.3.0 **Contractor's understanding:**
It is understood and agreed that the Contractor has by careful examination, satisfied himself as to the nature and location of the work, the configuration of ground, the character, quality of the materials to be encountered, the character of equipment and facilities needed preliminary and during the execution of the works, the general and local conditions, the labour conditions prevailing therein and all other matters which can in any way affect the works under the Contract.

5.3.1 **Commencement of Works:**
The Contractor shall commence the works within immediately after the receipt of order in writing to this effect from the Employer and shall proceed with the same with due expedition and without delay.

5.3.2 **Programme of work and Compliance to Engineers Instructions:**
The Contractor shall on receipt of the letter of intent/order or as soon as possible thereafter, but not later than **30 days** from the date of issue of letter of intent/order submit to Engineer for his approval, CPM, PERT and Bar Charts. The programme shall be prepared in such a manner that it shall have adequate float for the unforeseen items and additional works, if any, and also programme showing the order and procedure in which he proposes to carry out the work. The Contractor shall, whenever required by the Engineer, also provide in writing for his information general description of the arrangement and methods which the Contractor proposes to adopt for the execution of the work. If at any time it should appear to the Engineer that the actual progress of the work does not conform to the approved programme referred to above, the Contractor shall produce at the request of the Engineer, a revised programme showing the modification to the approved programme necessary to ensure timely completion of the Contract. The submission to and approval by the Engineer of such programmes or the furnishing of such particulars shall not relieve the Contractor of any of his duties or responsibilities or obligations under the Contract. The Employer or their representatives shall have full powers and authorities during progress of the work to issue such instructions as may be necessary for the proper execution of the work and the Contractor shall carry out and be bound by the same. In case the Contractor fails to submit the above referred programme charts or connected/modified programme charts, the Engineer will have the option to get these prepared at the cost of Contractor in addition to the levy of penalty which will be binding.

5.3.3 **Instructions of Engineer's Representatives:** Any instruction or approval given by the Engineer's representatives to the Contractor in connection with the works shall bind the Contractor as though it had been given by the Engineer provided as follows:

(a) Failure of the Engineer's Representatives to disapprove any work or materials shall not prejudice the power of the Engineer thereafter to disapprove such works or materials and to order the removal or breaking up thereof.
(b) If the Contractor shall be dissatisfied by reason of any decision of the Engineer's representative he shall be entitled to refer the matter to the Engineer who shall there upon confirm or vary such decision.

5.3.4 **Responsibilities for the Structural Adequacy:**
The Contractor shall comply with the provisions of the Contract and with due care and diligence, execute and maintain the work and provide all labour, including supervision of all works, structural plans and other things whether of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the Contract. The Contractor shall be fully responsible for the adequacy, suitability and safety at site of all the works and methods of the construction adopted.

5.3.5 **Supervision of Works:**
Provision of efficient and competent staff: The Contractor shall place and keep on the works at all time efficient, competent and qualified staff to give the necessary directions to his workmen and to see that they execute their work in sound and proper manner and shall employ only such supervisors, workmen and labourers in or about the execution of any of the works as are careful and skilled in their various trades and callings. The Contractor shall at once remove from the works any agent, permitted subcontractor, supervisor, workmen or labourer who shall be objected to by the Engineer and if and whenever required

by the Engineer, he shall submit a correct return showing the names of all staff and workmen employed by him. In the event of the Engineer being of the opinion that the Contractor is not employing on the works sufficient number of staff and workmen as is necessary for the proper completion shall forthwith on receiving intimation to this effect take on the additional number of staff and labour specified by the Engineer within seven days of being so required and failure on the part of the Contractor to comply with such instructions still entitle EMPLOYER to levy penalty or rescind the Contract under relevant provisions of these conditions.

5.3.6 The Contractor shall employ at site at his own cost at least one full-time Civil Engineering diploma Engineer with minimum experience of 7 years in carrying out similar types of works with adequate number of Assistants. The name, qualifications, and experience of the Engineer proposed to be employed by the Contractor shall have to be got approved from the Engineer before the commencement of the work. A penalty of Rs.10,000/- per month shall be recoverable from the Contractor for Non-compliance of this clause. Continued non compliance of Engineer's instructions shall amount to breach of the Contract by the Contractor who shall be solely responsible for all the consequences arising therefrom, without prejudice to other rights and remedies.

5.3.7 **Other Works:**
Separate Contracts in connection with works: EMPLOYER shall have the right to allot other Contracts in connection with the works. The Contractor shall afford other Contractors reasonable opportunity for the storage of their materials and the execution of their work and shall properly connect and co-ordinate his work with theirs. If any part of the Contractor's work depends for the proper execution or re sults upon the work of another contractor, the Contractor shall inspect and promptly report to the Engineer any defect in such work that renders it unsuitable for such proper execution and results. The Contractor's failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other contractor's work after the execution of his work.

5.3.8 **Setting out of Works:**
The Contractor shall be responsible for the true, correct and proper setting out of the works in relation to the original points, lines and levels of reference given by the Engineer in writing, subject to above mentioned, all the positions, levels, dimensions and alignment of all parts of the work and for the provision of all necessary instruments, appliances and labour in connection therewith. If at any time during the progress of the work, any error shall appear or arises in any part of the work, the Contractor on being required to do so by the Engineer shall at once rectify such errors to the satisfaction of the Engineer. The checking of any setting out of line or level by the Engineer or his representatives shall not in any way relieve the Contractor of his responsibility for the correctness thereof and the Contractor shall carefully protect and preserve all bench marks, site levels, pegs, etc. used in setting out all the work. In case the Contractor is required to revise the setting out of work due to any reason he shall do so without any extra charges.

5.3.9 **Contractor to keep Site clear:** During the execution of work, the Contractor shall keep Site reasonably free from obstructions and shall store or dispose off any constructional plant and surplus material and clear away and remove from site any rubbish or temporary work no longer required.

5.3.10 **Clearance of Site on Completion:**
On the completion of the work, the Contractor shall clear away and remove from site all constructional plant surplus materials, rubbish and temporary work of every kind and restore the ground to original level unless otherwise instructed by the Engineer. Contractor shall leave whole of the site, work of every kind, and 10 metres distance from the site periphery clear in workman like conditions to the satisfaction of the Engineer.

5.3.11 **Watchman:**
The Contractor shall make his own security arrangements to guard the site and premises at all times at his own expense. Security arrangements shall be adequate to maintain strict control on the movement of materials and labour. The Contractor shall extend the security arrangements to guard the material stacked and/or fixed on the premises by the sub-Contractors. Nothing extra shall be payable in this regard.

5.3.12 **Safety Provisions:**
The Contractor shall at his own expense, arrange for the safety provisions as required under various statutory laws imposed in respect of labour directly or indirectly employed for the performance of the work and shall provide all facilities in connection therewith. Precautions in the safety clause are the minimum necessary and shall not relieve the Contractor from taking additional safety precautions as may be required for particular type of the work. Also mere observance of these precautions shall not absolve the Contractor of his liabilities in case of loss or damage to the property or injury or death of any person including Contractor's labour, Engineer's representatives or any member of the public.

5.3.13 **Alterations to be Authorised:**
No alterations in or additions to or omission or abandonment of any part of the works shall be deemed authorised, except under instructions from the Architect/Engineer and the Contractor shall be responsible to obtain in writing such instruction in each and every case from the Principal, Mayoor School,.

5.3.14 **Extra Works:**
Should works over and above those included in the Contract be required to be executed at the site, the Contractor shall have no right to be entrusted with the execution of such works which may be carried out by another Contractor or Contractors or by other means at the option of EMPLOYER.

5.3.15 **Adherence to Specifications and Drawings:**
The whole of the works shall be executed in perfect conformity with the Specifications and Drawings. If the Contractor performs any work in a manner contrary to the Specifications or Drawings or any of them and without such reference to the Engineer, he shall bear all the costs arising or ensuing therefrom, and shall be responsible for all losses to EMPLOYER.

5.3.16 **Drawings and Specifications of the Works:**
The Contractor shall keep one copy of Drawings and Specifications at the site in good order, and also such other Contract Documents as may be necessary, to be made available to the Engineer and the Engineer's representatives.

5.3.17 **Ownership of Drawings and Specifications:**
All drawings and specifications and copies thereof furnished by Architect/Employer to the Contractor are deemed to be the property of Architect. They shall not be used on other works and with exception of the signed Contract set, shall be returned by the Contractor to the Architect on completion of the works or Termination of the Contract.

5.3.18 **Compliance with Contractor's request for details:**
The Architect/Engineer shall furnish with reasonable promptness after receipt, by him of the Contractor's request for the same, additional instructions by means of Drawings or otherwise, necessary for the proper execution of the works or any part thereof, all such Drawings and instructions shall be consistent with the Contract Documents and reasonably inferable therefrom.

5.3.19 **Meaning and intent of Specifications & Drawings:**
If any ambiguity arises as to the meaning and intent of any portion of the Specifications and Drawings or as to execution or quality of any work or material or as to the measurements of the works, the decision of the Engineer thereon shall be final subject to appeal (within seven days of such decision being intimated to the Contractor) to the Architect who shall have the power to correct any errors, omissions, or discrepancies in the Specifications, Drawings, classification of work or materials, and whose decision in the matter, in dispute or doubt, shall be final and conclusive.

5.3.20 **Work during Night:**
The Contractor shall not carry out any work between sun-set and sun-rise without the previous permission of the Engineer.

5.3.21 **Damage to EMPLOYER property and private life and property:**
The Contractor shall be responsible for all risks to the works and for trespass and shall make good at his own expense all loss or damage whether to the works themselves or to any other property of EMPLOYER or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by EMPLOYER even though all reasonable and proper precautions may have been taken by the Contractor and in case EMPLOYER shall be called upon to make good any such costs, loss or damages, or to pay compensation (including that payable under the provisions of the Workmen's Compensation Act or any Statutory Amendment thereof) to any person or persons sustaining damage as aforesaid by reason or any act, or any negligence or omission on the part of the Contractor, the amounts of any costs or charges (including costs and charges in connection with legal proceedings), which EMPLOYER may incur in reference thereto, shall be charged to the Contractor. EMPLOYER shall have the power and right to pay or to defend or compromise any claims of threatened legal proceedings or in anticipation of legal proceedings being instituted consequent on the action or default of the Contractor, to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, charging to the Contractor, as aforesaid, any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, the incurring of any such expenses shall not be called in question by the Contractor.

5.3.22 **Sheds, Store-houses and Yards:** The Contractor shall at his own expense provide himself with sheds, store-houses and yards in such situations and in such numbers as in the opinion of the Engineer are requisite for carrying on the works and the Contractor shall keep at each of such sheds store- houses

and yards a sufficient quantity of materials and plant in stock as not to delay the carrying out of the works with due expedition and the Engineer and the Engineer's representatives shall have free access to the said sheds, store houses and yards at any time for the purposes of inspecting the stock of material and plant so kept in hand, and any materials or plant which the Engineer may object to shall not be brought upon or used in the works, but shall be forthwith removed from the sheds, store-houses or yards by the Contractor. The Contractor shall at his own expenses provide and maintain suitable generators, soaking vats, etc. or any other equipment necessary for the proper execution of the works.

5.3.23 **Workmanship and Testing :**
The whole of the works and/or supply of materials specified and provided in the Contract or that may be necessary to be done in order to form and complete any part thereof shall be executed in the best workman like manner with materials of the best and approved quality of their respective kinds, agreeable to the particulars contained in or implied by the specifications and as referred to in and represented by the drawings or such other additional particulars, instructions and drawings as may be found requisite to be given during the execution of the works and to the entire satisfaction of the Engineer according to the instructions and directions which the Contractor may from time to time receive from the Engineer. The Contractor shall, at his own cost and expense, supply to the Architect/Engineer samples of materials proposed to be used in the works. The samples must be produced at least **six weeks** before they are to be incorporated in works. The Architect/Engineer shall within **fifteen days** of supply of samples or within such further period as he may require, inform the Contractor whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply the Engineer for his approval fresh samples complying with the specification laid down in the Contract. No materials shall be brought by the Contractor to site unless samples are approved. The materials may be subjected to tests by means of such machines, instruments and appliances as the Engineer may direct and entirely at the expenses of the Contractor.

5.3.25 The materials brought to site by the Contractor and before they are allowed to be used in the works by the Engineer shall be inspected by the Contractor to ensure that these conform to the required stipulations and record a certificate to that effect in the register to be maintained for this purpose.

5.3.26(a) **Testing Laboratory:**
The Contractor during the course of execution of works shall at his own expense provide a Testing Laboratory for conducting necessary tests for materials such as bricks, sand, aggregate, Cube strength of concrete, batching of concrete etc. The Laboratory should be equipped with all such instruments as required by the Engineer such as Cube Testing Machine, Sieves, Weighing Scales, Graduated cylinders, Slump Cone Test, Vernier Callipers, Micrometers, Cable Guage, Multimeter, Earth Testing, Maggar, Bubble Levels, Theodolite, Dumpy Level. Oven, etc. No equipment shall be removed from the laboratory by the Contractor without specific approval of the Engineer. **However the tests required by the Architect/Engineer may also be carried out by any other approved laboratory, all the costs for such tests shall be borne by the Contractor.**

5.3.26(b) **Workmanship:**
The Contractor shall engage specialist firms for the execution of the following works:

(i) Electrical sub-Contractor(s) (holding registration with Government Departments).
(ii) Plumbing, sanitary, sewerage and water supply sub-Contractor(s) (holding registration with Government Departments).
(iii) Water proofing works (company's authorised applicator)
(iv) Anti-termite works (company's authorised applicator)

5.3.27 **Removal of Improper Work and Materials:**
The Engineer or the Engineer's Representative shall be entitled to order from time to time :

(i) The removal from the site (within the time specified) any materials which in his opinion are not in accordance with the Specifications or Drawings.
(ii) The substitution of proper and suitable materials.
(iii) The removal and proper re-execution (not withstanding any previous tests thereof or "On Account" payments thereof)of any work which in respect of materials or workmanship is not in his opinion in accordance with the specifications and in case of default on the part of the Contractor in carrying out such order, EMPLOYER shall be entitled to levy a penalty of **Rs.10,000/- per month** and continuous non compliance of order will entitle EMPLOYER to rescind the Contract, under relevant clause of these conditions.

5.3.28 **Facilities for Inspection and Access to Site of work:**
The Contractor shall afford the Principal, Mayoor School, authorities, Engineer, Architect and their representatives every facility for entering in and upon every portion of the work at all hours for the purpose and the Engineer and the Engineer's representative shall at all times have free access to every part of the works and to all places/workshops/factories at which material for the works are stored or being obtained/manufactured.

5.3.29 **Examination of work before covering up:**
The Contractor shall give seven days notice to the Engineer or Engineer's representative whenever any work or materials are intended to be covered up by the earth, in bodies or walls or otherwise to be placed beyond the reach of measurement in order that the work may be inspected or that correct dimensions may be taken before being so covered, placed beyond the reach of measurement in default whereof the same shall at the option of the Engineer or the Engineer's representative be uncovered and measured at the Contractor's expense or no payment shall be made for such work or materials.

5.3.30 **Temporary Works:**
The temporary works necessary for the proper execution of the works shall be provided and maintained by the Contractor and subject to the consent of the Engineer shall be removed by him at his expense when they are no longer required and in such manner as the Engineer shall direct. In the event of failure on the part of the Contractor to remove the temporary works, the Engineer will cause them to be removed and the cost as incurred for supervision and other incidental charges shall be recovered from the Contractor. If temporary huts are provided by the Contractor on EMPLOYER's land for labour engaged by him for the execution of the work, the Contractor shall arrange for handing over vacant possession of the said land whenever directed by the Engineer to do so. If the Contractor's labour refuses to vacate, and have to be ejected by EMPLOYER, necessary expenses incurred by EMPLOYER in connection therewith shall be borne by the Contractor. Hindrance caused to work will invite penalty also as envisaged in para 5.3.27.

5.3.31 **Arrangements for Water and Electricity:**
The Owner shall provide power for construction at one point at site of work at actual cost. The contractor shall provide all temporary service lines, boards, switches, cut-outs etc. as required for his used on the works and remove the same on completion at his own cost. If the State Electricity Board supply is not available, then the contractor will have to make his own arrangement to carry out the work uninterrupted. The contractor shall be charged at relevant commercial rates of the state electricity board for the actual units of electricity consumed at the site. The contractor shall also pay 0.75% of the civil work as water charges for water provided by the Employer.

5.3.32 **Property in Materials and Plant:**
The materials and plant brought by the Contractor upon the site or on the land occupied by the Contractor in connection with the works and intended to be used for the execution thereof shall immediately as they are brought upon the site or the said land, be deemed to be the property of EMPLOYER. Such of them as during the progress of the works are rejected by the Engineer or are declared by him not to be needed for the execution of the work or such as on the grant of the certificate of completion remain unused shall immediately on such rejection, declaration or grant cease to be deemed property of EMPLOYER and the Contractor may then (but not before) remove them from the site or the said land. This clause shall not in any way diminish the liability of the Contractor nor shall EMPLOYER be in any way responsible for any loss or damage which may happen to or in respect of any such materials or plant either by the same being lost, stolen, or destroyed by fire, tempest or otherwise.

5.3.33 **Tools, Plant and Materials supplied by EMPLOYER:**
The Contractor shall take all reasonable care of all tools, plant and materials or other property, whether of alike description or not, belonging to EMPLOYER and committed to his charge for the purpose of the works and shall be responsible for all damage or loss caused by him, his agents, permitted sub-Contractors or his workmen or others while they are in his charge. The Contractor shall sign all receipts for tools, plants and materials made over to him by Engineer and on completion of the works shall hand over, the unused balance of the same to the Engineer in good order and repair, (fair wear and tear excepted) and shall be responsible for any failure to account for the same or any damage done thereto.

5.3.34 **Precautions during progress of Works:**
During the execution of works, unless otherwise specified, the Contractor shall at his own cost provide materials for and execute all shoring, timbering, shuttering and scaffolding, fencing and structuring work etc. as are necessary for the stability and safety of all structures, excavations and works and shall ensure that no damage, injury or loss is caused or likely to be caused to any person or property.

5.3.35 **Roads and Water Courses:**
Existing roads or water courses shall not be blocked, cut through, altered, diverted or obstructed in any way by the Contractor, except with the permission of the Engineer and the School Authorities. All

compensation claimed for any unauthorised closure, cutting through, alteration, diversion or obstruction to such roads or water course by the Contractor or his agent or his staff shall be recoverable from the Contractor by deduction from any sums which may be due/become due to him in terms of the Contract or otherwise according to law.

5.3.36 **Rates for Items of Works:**
The rates entered in the accepted Schedule of Rates of the Contract are intended to provide for works duly and properly completed in accordance with the General and Special (if any) Conditions of Contract and the Specifications and Drawings together with such enlargements, extensions, diminution, reductions, alterations, or additions as may be ordered without prejudice to the generality thereof and shall be deemed to include and cover superintendence and labour, supply, including full freight of material, stores, patterns, profiles, moulds, fittings, centering, scaffolding, shoring, props, timber, machinery, derricks, tackle, ropes, pegs, posts, tools, etc. and all apparatus and plant required on the works, except such materials as may be specified in the contract to be supplied to the Contractor by EMPLOYER, the erections, maintenance and removal of all temporary works and buildings, all watching, lighting, bailing, pumping and draining, all prevention of or compensation for trespass, all barriers and arrangements for the safety of the public or of employees during the execution of works all sanitary and medical arrangements for labour camps as may be prescribed by EMPLOYER, the setting of all work and of the construction, repair and upkeep of all center lines, bench marks and level pegs thereon, site clearance, all fees, duties, royalties, rent and compensation to owners for surface damage or taxes and impositions payable to local authorities in respect of land, structures and all materials supplied for the works, or other duties or expenses for which the Contractor may become liable or may be put to under any provision of law for the purpose of or in connection with the execution of the contract, and all such other incidental charges or contingencies as may have been specially provided for in the Specifications.

5.3.37 **Co-ordination of Work:**
At the commencement of work and from time to time, the Contractor shall confer with other Contractors, sub-Contractors, persons engaged on separate contracts in connection with the works, and with the Engineer for the purpose of the co-ordination and execution of various phases of works. The Contractor shall ascertain from the other Contractors. in connection with the works, the extent of all chiseling, cutting and forming of all openings, holes, grooves etc. as may be required to accommodate the various services. The Contractor shall ascertain the routes of all services and the positions of all floor and wall outlets, traps, etc. in connection with the installation of plants, services and arrange for the construction of work accordingly. The breaking and cutting of complete work shall not be done unless specifically authorised in writing by the Engineer. All breaking shall be done by the Contractor for execution of work and no work shall be done over broken or patched work without first ascertaining that the broken surface is adequately prepared and reinforced to receive and hold the future work. The work, broken without authorisation, will be subject to replacement at the direction of the Engineer.

5.3.38 **Access Roads :**
The Contractor shall provide necessary access roads to the site of work from the nearest thoroughfare/right of way at his cost.

5.3.39 **Suspension of Works :**
The Contractor shall on the order of the Engineer suspend the progress of the works or any part thereof or such time or times and in such manner as the Engineer may consider necessary and shall during such suspension properly protect and secure the work so far as is necessary in the opinion of the Engineer. No compensation shall be payable to the Contractor on whatsoever account for the suspension of work. In the event such suspension exceeds 14 days, the Contractor shall be entitled to such extension of time for completion of the works as the Engineer may consider proper and reasonable with regard to period or periods of such suspension provided suspension has not been ordered on account of any default on the part of the Contractor.

GUARANTEES

5.3.40 **Quality of Work:**
The Contractor shall guarantee that the materials and workmanship are the best of their respective kinds for the service intended and that all items of work will be free from all inherent defects in workmanship and material. he shall also guarantee that the work will not fail in any respect due to quality of material, workmanship and methods of construction. The specifications assume a proper degree of skill on the part of the Contractor and workmen employed. The Contractor shall consult the Engineer, whenever in his judgment variation in the methods of construction or in the quality of materials would be beneficial or necessary to fulfill the guarantees called for. Such variations may be made by the Contractor only when authorised by the Engineer.

5.3.41 **Rejection:**

If during the period of maintenance any work or material fails in any respect to meet the above guarantee, the Contractor shall replace such work or material in a condition which will meet the above guarantee, immediately.

5.3.42 **Cost of Execution of work or repair etc.:**
All work or repair shall be carried out by the Contractor at his own expenses if the necessity thereof shall in the opinion of the Engineer be due to the use of materials or workmanship not in accordance with the contract or on account of neglect or failure on the part of the Contractor to comply with any obligation expressed or implied on the Contractor's part under the Contract. If in the opinion of the Engineer such necessity shall be due to any other cause, the value of such work shall be ascertained and paid for as if it were additional work.

5.3.43 **Remedy on Contractor's failure to carry out works required:**
If the Contractor fails to do any such work or repair within the stipulated time as aforesaid required by the Engineer, the Engineer shall be entitled to carry out such works or repair at the Contractor's cost. The Engineer shall be entitled to recover from the Contractor the cost thereof or may deduct the same from any money due or that may become due to the Contractor.

IV. VARIATIONS IN EXTENT OF CONTRACT

5.4.0 **Powers of Modifications to Contracts:**
The quantities of the various items indicated in the "Schedule of Quantities" forming part of this Contract are approximate and are subject to variations based on the ground strata, final detailed drawings and instructions issued during the execution of work and other conditions under which the works are executed. The Employer reserves the right to make variations in the quantities or delete any of the item(s) altogether from the Schedule of Quantities and/or order extra items to be executed or substitute the item in the Schedule of Quantities, such variations shall in no way affect this Contract. The rates quoted by the Contractor and accepted as per these Contract Documents shall be firm and the Contractor shall not be entitled to any revision in rates due to any variation in quantities of items shown in the Schedule of Quantities. Time for completion of the work shall be modified in the proportion that of the actual work verses the original Contract work and the certificates of the Engineer shall be conclusive to such proportion.

5.4.1 **Schedule of Quantities:**
The Schedule of Quantities, unless otherwise stated, shall be deemed to have been prepared in accordance with the standard method of measurement of building works. Any error in description or in quantity or omission of items from the Schedule of Quantities shall not vitiate this Contract but shall be rectified and the value thereof as ascertained hereof shall be added to or deducted from the Contractor's amount (as the case may be) provided that there shall be no rectification of errors in the Contractor's schedule of rates.

5.4.2 Rate for Extra, Additional or Altered or Substituted work:-
The Employer shall have full powers to order execution of extra additional, altered or substituted items not included in the Schedule of Quantities forming part of this Contract. The execution of such items and/or any instructions issued thereafter shall not, in any way, affect or vitiate the Contract and the Contractor shall be bound to carry out all such items required under the same terms and conditions as per these Contract Documents.

(i) If the rate for additional, altered and substituted work directly available in the Contract for the work, the Contractor is bound to carry out the work at the same rates as are available in the Contract for the work.
(ii) If the rates for additional, altered or substituted work are not directly available in the Contract for the work, the rates will be derived from the rates for a similar class of work as are specified in the Contract for the work.
(iii) If the rates for altered, additional or substituted work cannot be determined in the manner specified in sub-clause (i) and (ii) above, the rates for such items will be worked out on the basis of rates given in BSR 2021 Ajmer Circle. **The rates for additional, altered and substituted work shall be paid as per BSR 2021 Ajmer Cicle @ ……. % above/below.**
(iv) If the rates for the altered, additional or substituted work cannot be determined in the manner specified in sub-clause (i) to (iii) above, then the Contractor shall execute the work under instructions of the Architect/ Engineer and he will be paid on the basis of market analysis submitted by the Contractor and approved by the Architect/Engineer. For the purpose of market analysis of rates, overheads and Contractors' profit shall be taken at 15%. However, if the Contractor is not satisfied with the decision of the Architect/Engineer in respect of the rates so approved by him, then he may appeal to the Principal, Mayoor School, within 30 days of getting the decision of the Engineer supported by analysis of the rates or rates claimed. The Principal's decision after hearing both the parties in the matter would be final and binding on the Contractor and Engineer/ Architect.

V. MEASUREMENTS, CERTIFICATES AND PAYMENTS

5.5.0 **Quantities in Schedule of Rates annexed to Contract:**
The quantities set out in the accepted Schedule of Rates with items of work quantified are the estimated quantities of the work and they shall not be taken as the actual and final quantities of the works to be executed by the Contractor in fulfillment of his obligations under the contract.

5.5.1 **Measurements of Works:**

(i) The Contractor shall be paid for the works at the rates of the accepted Schedule of Rates and for all the authorised extra works at rates determined on the measurements taken by the Contractor and verified by the Engineer or the Engineer's Representative in accordance with the rules prescribed for the purpose by EMPLOYER.

(ii) The quantities for items, the unit of which in the accepted Schedule of Rates is 100 or 1000 shall be calculated to the nearest whole number. Any fraction below half being dropped and half and above being taken as one, for items the unit of which in the accepted Schedule of Rates is single, the quantities shall be calculated to two places of decimals.

(iii) Such measurements will be taken of the work in progress from time to time and at such intervals as in the opinion of the Engineer shall be proper having regard to the progress of the works. The date and time on which `on account' or final measurement are to be verified shall be communicated to the Contractor who shall be present at the site and shall sign the results of the measurements.

5.5.2 **On Account Payments:**

(i) Contractor shall be entitled to be paid from time to time by way of "On-account payable" only for such works as in the opinion of the Engineer he has executed at site subject to any deduction which may be made from the same.

(ii) Detailed measurements for the work done at site will be recorded in the prescribed measurement book by the Contractor and On-Account Bill shall be prepared and submitted to the Engineer who will pass the same for payment after verification.

(iii) The measurements submitted by the Contractor shall be jointly verified on the date and time fixed by the Engineer and the Contractor shall be present at site and shall sign the results of the measurements which will also be signed by the Engineer/Engineer's representative. These measurements so verified in the prescribed measurement book will be treated as an acknowledgment and acceptance of the accuracy of the measurement. Failing the Contractor's attendance, the work will be checked and measured up in his absence and such measurements, shall notwithstanding such absence, be binding on the Contractor whether or not he shall have signed the measurement book, provided always that any objection made by the Contractor in writing to any measurement shall be duly investigated and considered in the manner set-out above.

(iv) The On-Account Bill shall be submitted in the prescribed proforma approved by the Engineer. No bill, submitted incomplete or not in the prescribed manner will be entertained. Once the On-Account Bill is submitted by the Contractor complete in all respects to the satisfaction of the Engineer, the same will be normally paid within 15 days of submission. The Contractor shall, however, not be entitled for any interest or any other compensation due to delayed payment. "The bill on receipt in corporate office of EMPLOYER after its having been checked at site will be passed for payment to the extent of **75%** of net amount which will be treated as advance. This amount will be adjusted while passing running/ on-account bill and balance **25%** paid thereafter. The next running/on account bill will be prepared only after the first bill is cleared."

(v) Normally On-Account payments for the work done by the Contractor shall be made once a month provided that the gross value of work done since the previous payment is not less than **Rs.30 lacs.**

5.5.3. **Final Measurement & Payment:**

(i) When the works have been actually completed and the Engineer shall have certified in writing that they have been so completed and the Engineer has reasonably satisfied himself about the same, the Contractor shall submit his final bills of quantities supported by detailed measurements within **15 days**. Subject to the joint checking of the measurements by the Engineer and the Contractor, the Engineer shall arrange to effect actual payment of such of the amounts as are undisputed and accepted after checking therefrom of the amounts due to the Contractor in terms of the Contract.

(ii) The Contractor shall be entitled to the payment of the final bill on the basis of final certificate to be issued in writing by the Engineer at the expiration of the period referred to as the "Defects Liability Period" in the Appendix hereto from the date of virtual completion or as soon as after the expiration of such period as the works shall have been finally completed and all defects made good according to the true intent and meaning hereof whichever shall last happen, provided always that the issue by the Engineer of any certificate during the progress of the work and after the completion shall not relieve the Contractor from his liability in cases of fraud, dishonesty, or fraudulent concealment relating to the works or materials or to any matter dealt within the certificate in case of all defects and insufficiencies in the works or materials which on reasonable examination could not have been

disclosed. No certificate of the Engineer shall of itself be conclusive evidence that any work or material which it relates are in accordance with the Contract and the Engineer therefore be empowered to withhold such sum or sums as deemed necessary for the time being till final measurements have been made and quantities and quality of work done have been checked and determined.

(iii) The Engineer shall have power to withhold any certificate/payment if the works or any part thereof is not carried out to his satisfaction or some discrepancies or accounts/audit objections are noticed and raised requiring clarification or rectification(s).

(iv) In case of termination/rescinding of the Contract, Contractor shall be required to measure work within seven days from the date of termination/rescinding for joint verification by the Engineer, failing which the Engineer will record the measurements after giving due notice to the Contractor of the date and time of the measurement to be recorded and in case the Contractor still fails to witness the measurements, then the measurements so recorded by the Engineer will be the final and binding on the Contractor.

5.5.4 **Delayed Payments:**
All payments as due to the Contractor in pursuance of any certificate given by the Engineer shall be made promptly unless some bill has been held up under objection in writing, pending clarification or reply from the Contractor. All objections shall be resolved to the satisfaction of the Employer if necessary by holding meetings and discussions, minutes whereof shall be recorded. No interest, however, shall be claimed and payable for such delayed payments.

5.5.5.1 **Maintenance of Works:** The Contractor shall at all times during the progress and continuance of the works and also for the period of maintenance (Defects Liability Period) specified in the Tender form and after the date of issue of the certificate of completion by the Engineer or any other earlier date subsequent to the completion of the works that may be fixed by the Engineer be responsible for and effectually maintain and uphold in good substantial, sound and perfect condition all and every part of the works and shall make good from time to time at all times as often as the Engineer shall require, any damage or defect that may during the above period arise in or be discovered or be in any way connected with the works, provided that such damage or defect is not directly caused by act of providence or insurrection or civil riot and the Contractor shall be liable for and shall pay and make good to the Employer whenever required by the Engineer to do so, all losses, damages, costs and expenses they or any of them may incur or be put to or be liable to by reason or in consequence of the operations of the Contractor or of his failure in any respect.

5.5.5.2 **Urgent measures/Emergency works:**
Any Urgent measures/Emergency works which in the opinion of the Employer, become necessary during the progress of the work to obviate any risk of accident or failure, or which becomes necessary for security or rectification of essential services, during the defects liability period, shall be carried out by the Contractor without any extra charges. If any emergency work(s) become necessary and Contractor delays or fails to carry out such work(s), the Employer shall get the same work(s) carried out by any other agency at the risk and cost of the Contractor. All such expenses shall be recovered from the Contractor.

5.5.5.3 **Handing over services and site Development Works:**
The Contractor shall hand over the site development works, i.e. sewerage, drainage, water supply etc. to the concerned authorities in good substantial, sound and perfect condition, as acceptable to the concerned authorities at his own cost, including liaison with and arranging inspection by, concerned local authorities.

5.5.6 **Period of Maintenance for Complete Work: (Defects Liability Period)**
The period of maintenance for the works shall be **Twelve months** starting from the date of virtual completion of the work or as certified by the Engineer.

5.5.7 **Contract valid during Maintenance Period:**
The Contract shall remain valid and in force until the expiry of maintenance (Defect Liability Period) period.

5.5.8 **Certificate of Completion of Works:**
As soon as the work is completed, the Contractor shall give notice of such completion whether the whole of the work or any part of the work for which a separate date of completion is stipulated in the Contract to the Engineer. Within thirty days of receipt of such notice Engineer shall inspect the work and shall also arrange for carrying out of such tests that may be prescribed under the Contract. If the Engineer notices any incomplete items of works or any defects which are to be rectified by the Contractor or if any part of or whole of the works fails to pass the specified tests, the Engineer shall furnish to the Contractor list of all such incomplete works, deficiencies, defects failure to pass test etc. and may refuse to issue a Certificate of Completion to the Contractor, provided, however, that such certificate shall not be refused only on the grounds of any defects in the work required to be carried out in respect of Contracts/items wherein a specific Defect Liability Period is provided for. If in the opinion of the Engineer, the works have been

satisfactorily completed and have satisfactorily passed its final test or test that may be prescribed, the Engineer shall issue a Certificate of Completion duly accepted by the Employer indicating :

(i) the date of completion
(ii) Items for which payment shall be made at reduced rates and
(iii) Defect Liability Period, if any, shall commence from the date of issue of such certificate, in case separate periods of completion have been specified for items or groups, the Engineer shall issue separate Completion Certificates for such items or groups of items. No completion certificate shall be issued nor shall the work be considered to be complete till the Contractor have removed from the premises on which the work has been executed all scaffolding, sheds and surplus materials except such as are required for rectification of defects, rubbish and all huts and sanitary arrangements, required for his workmen at the site in connection with the execution of the work as shall have been erected by the Contractor or the workmen and cleaned all dirt from the parts of building(s) in, upon or about which the work has been executed or of which he may have had possession for the purpose of the execution thereof and cleaned floors, gutters and drains, eased doors and sashes, oiled locks and fastening labeled keys clearly, handed them over to the Engineer or his representatives and made the whole premises fit for immediate occupation for use to the satisfaction of the Engineer. If the Contractor shall fail to comply with any of the requirements of these conditions, as aforesaid, on or before the date of completion of the works, the Engineer may at the expense of the Contractor fulfil such requirements and dispose of the scaffolding, surplus materials and rubbish etc. as he thinks fit and the Contractor shall have no claim in respect of any scaffolding or surplus materials except for any sum actually realised by the sale thereof less the cost of fulfilling the requirements and any other amount that may be due from the Contractor. If the expenses of fulfilling such requirements is more than the amount realised on such disposal as aforesaid, the Contractor shall forthwith on demand pay such excess. If at any time before completion of the entire work, items or groups of items for which separate periods of completion have been specified are completed, the Engineer shall take possession of any part or parts of the same (any such part(s) being hereinafter in the condition referred to as the relevant part) then notwithstanding anything expressed or implied elsewhere in this Contract.
(iv) Within thirty days of the date of completion of such items or groups of items or of possession of the relevant part, the Engineer shall issue Completion Certificate for the relevant part as per condition above provided the Contractor fulfills his obligations under that condition for the relevant part.
(v) The Defects Liability Period in respect of such items and the relevant part shall be deemed to have commenced from the certified date of completion of such items or the relevant part as the case may be.
(vi) The Contractor may reduce the value insured by the full value of the completed items or relevant part as estimated by the Engineer for this purpose. This estimate shall be applicable for this purpose only and for no other purpose.

5.5.9 **Contractor not absolved by Completion Certificate:**

The Certificate of Completion in respect of the works referred to in **Clause 5.5.6** shall not absolve the Contractor from his liability to make good any defects, imperfections, shrinkage or faults which may appear during the period of maintenance specified in the tender arising in the opinion of the Engineer from materials or workmanship not in accordance with the Drawings or Specifications or instructions of the Engineer which defects, imperfections, shrinkage or faults shall upon the directions in writing of the Engineer be amended and made good by the Contractor at his own cost; and in case of default on the part of the Contractor; the Engineer may employ labour and material or appoint another Contractor to amend and make good such defects, imperfections, shrinkage's and faults and all expenses consequent thereon and incidental thereto shall be borne by the Contractor and shall be recoverable from any money due to him under the Contract. Any defect, shrinkage, settlement or other faults which may appear within the "Defects Liability Period" stated in **Clause 5.5.6** above or, if one stated, then within twelve months after the virtual completion of the works arising in the opinion of the Engineer from materials or workmanship not in accordance with the Contract, and shall upon the directions in writing of the Engineer, and within such reasonable time as shall be specified therein, be amended and made good by the Contractor, at his own cost and unless the Employer in consultation with their Engineer shall decide that he ought to be paid for such amending and making good, and in case of default the Employer may employ and pay other persons to amend and make good such damage, loss and all expenses shall be recoverable from him by the Employer upon the Engineer's Certificate in writing from any money due or that may become due to the Contractor, or the Employer may in lieu of such amending and making good by the Contractor deduct from any moneys due to the Contractor a sum to be determined by the Engineer equivalent to the cost of amending such work and in the event of the amount retained being insufficient, recover the balance from the Contractor together with any expenses the Employer may have incurred in connection therewith. Should any defective work have been done or material supplied by any sub-Contractor employed on the works, the Contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the Contractor. The Contractor shall remain liable under the provisions of this clause notwithstanding the signing by the Engineer of any certificate or the passing of any accounts.

5.5.10 **Approval only by Maintenance Certificate:**

No certificate other than the maintenance certificate referred to in **Clause 5.5.11** of these conditions shall be deemed to constitute approval of any work or other matter in respect of which it is issued or shall be taken part thereof or of the accuracy of any claim or demand made by the Contractor or additional or varied work having been ordered by the Engineer nor shall any other certificate conclude or prejudice any of the powers of the Engineer .

5.5.11 **Maintenance Certificate:**
The contract shall not be considered as complete until a maintenance certificate is signed by the Engineer stating that the works have been completed and maintained to his satisfaction. The maintenance certificate shall be given by the Engineer upon the expiration of the period of maintenance as soon as thereafter as any works ordered during such period shall have been completed to the satisfaction of the Engineer and full effect shall be given to this clause notwithstanding the taking possession of or using the works or any part thereof by EMPLOYER.

5.5.12 **Cessation of Employer's Liability:**
EMPLOYER shall not be liable to the Contractor for any matter arising out of or in-connection with the Contract or the execution of the works unless the Contractor shall have made a claim in writing in respect thereof before the issue of the maintenance certificate under this clause.

5.5.13 **Unfulfilled Obligations:**
Notwithstanding the issue of the maintenance certificate to the Contractor, the Contractor shall remain liable for the fulfillment of any obligation incurred under the provisions of the Contract prior to the issue of the maintenance certificate by Architect which remains unperformed at the time such certificate is issued and for the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force between the parties hereto.

5.5.14 **Records to be produced by the Contractor for inspections:**
The Contractor shall whenever required by the Engineer or his authorised representatives, produce or cause to be produced for examination any quotation, invoice cost or other accounts, books, vouchers, receipts, letters, memorandum or any copy of or extract from any such documents and also furnish information as may be required relating to the execution of this contract or relevant for verifying or ascertaining the cost of execution of this contract, or ascertaining that materials supplied by the Contractor are in accordance with the Specifications laid down in the contract. The Employer's decision on the question of relevancy of any documents or information or returns will be final and binding on the Contractor. If any part of the item of the work is allowed to be carried out by a sub-Contractor or any subsidiary or allied firm, the Engineer shall have power to scrutinise the books of such sub- Contractor or any subsidiary or allied firm through the Contractor and shall have powers to examine and inspect the same. The obligations imposed above are without prejudice to the obligations of the Contractor under any statute, rules or orders binding on the Contractor.

5.5.15 **Withholding and Lien in respect of sums claimed:**
Whenever any claim or claims for payment of a sum of money arises out of or under the Contract against the Contractor, the Employer shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the Contractor, and for the purpose aforesaid, the Employer shall be entitled to withhold the said cash Security Deposit or the security in any other form including Bank Guarantee(s) and also have a lien over the same pending finalisation or adjudication of any such claims. In the event of the security being insufficient to cover the claim amount or amounts or if no Security has been taken from the Contractor, the Employer shall have the right to withhold and have a lien to retain to the extent such claim amounts from any sum or sums, found payable or which any time with any other office, subsidiary of the Employer thereafter may become payable to the Contractor either alone or jointly with others under the same Contract or any other Contract with the Employer or pending finalisation or adjudication of any such claims. It is an agreed term of the Contract that the sum of money or moneys so withheld or retained under a lien referred to above by the Employer shall be kept withheld or retained by the Employer till the Employer's claim arising out of or under the Contract are mutually settled or determined by the Arbitrator (if the Contract is governed by the arbitration clause) or by the competent court, as the case may be, and that the Contractor will have no claim for interest or damages, whatsoever, on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the Contractor. For the purpose of this clause, where the Contractor is a partnership firm or a limited company, the Employer shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company, as the case may be, whether in his individual capacity or otherwise.

5.5.16 **Lien in respect of claim in Other Contract:**
Any sum of money due and payable to the Contractor either alone or jointly with others including the Security Deposit returnable to him, under the Contract, may be withheld or retained by way of a lien by the Employer against any claim of Employer or in respect of payment of a sum of money arising out of or under any other Contract made by the Contractor with the Employer or any other office or subsidiary of the

Employer. It is an agreed term of the Contract that the sum of money so withheld or retained under this clause by the Employer shall be kept withheld or retained by the Employer till the claim arising out or any other Contract is either mutually settled or determined by the Arbitrator (if the Contract is governed by the arbitration clause) or by the competent court, as the case may be and the Contractor shall have no claim for interest or damages, whatsoever, on any account or on any other account in respect of any sum of money withheld or retained under this clause and duly notified to the Contractor.

5.5.17 **Signature on Receipt for Amounts:**
Every receipt of money which may become payable or for any security which may become transferable to the Contractor under this Contract shall if signed in the partnership name by any of the partners of a Contractor, firm or by a person (holding power of attorney if the Contractor's firm is a limited company) be a good and sufficient discharge to the Employer in respect of money or security purported to be acknowledged thereby. In the event of the death of any of the partners during the currency of the Contract, it is hereby expressly agreed that every receipt by any one of the surviving partner shall, so signed as aforesaid be good and sufficient discharge as aforesaid provided that nothing in this clause shall be deemed to prejudice or effect any claim which the Employer may hereinafter have against the legal representatives of any of Contractor's partners so doing, for or in respect of breach of any of the Conditions of the Contract, provided also that nothing in this clause contained shall be deemed to prejudice or affect the respective rights or obligations of the Contractor's partners and of the legal heirs/representatives of any deceased Contractor/ Contractor's Partner(s).

VI. L A B O U R

5.6.1 **Compliance with Labour Laws:**

Contractor shall comply with all laws and statutory regulations dealing with the employment of labour such as :

(iii) The payment of Wages Act, 1936.
(iv) The Minimum Wages Act, 1938.
(v) The Workmen's Compensation Act, 1923.
(vi) The Contract Labour (Regulations and Abolishing) Act.
(vii) Employer's Liability Act, 1938.
(viii) Industrial Disputes Act, 1947.
(ix) Maternity Benefit Act, 1961.
(x) Mines Act.
(xi) The Employees State Insurance Act, 1948, Safety Code, Labour Welfare Acts or Rules or any modifications thereof, any other Laws & Regulations framed by the Competent Legislative Authorities from time to time.
(xii) Employees Provident Fund.

5.6.2 **Rest Days and Default Under Labour Laws:**
So far as practicable, the Contractor shall observe days of rest for the labour so as to coincide with the days of rest specified by the Employer for his employees. The Employer on having received report from the competent Inspecting Officer as defined under any/all of the above Acts, shall have the power to deduct from the money due to the Contractor any sum required or estimated to be required for making good the loss suffered by the worker/workers/ for the non fulfillment of the Conditions of the Contract for the benefit of the workers, non-payment of wages or wrongful deductions made from the wages. The Contractor shall indemnify Employer against any payments to be made under and for the observance of regulations aforesaid without prejudice to his right to claim indemnity from his sub-Contractors.

VII. CLAIMS

5.7.1 **Monthly Statement of Claims:**
The Contractors shall prepare and furnish to the Engineer once in every month an account giving full and detailed particulars of all claims for any additional expenses to which the Contractor may consider himself entitled and of all extra or additional works ordered by the Engineer which he has executed during the preceding month and no claim for payment for any such work will be considered which has not been included in such particulars.

5.7.2 **Signing of `No Claim' Certificate:**
The Contractor shall not be entitled to make any claim, whatsoever, against EMPLOYER under or by virtue of, or arising out of this Contract nor shall EMPLOYER entertain or consider any such claim, if made by the Contractor, after he shall have signed a `No Claim' certificate in favour of EMPLOYER in such form as shall be required by EMPLOYER after the works are finally measured up. The Contractor shall be debarred from disputing the correctness of the items covered by the `No Claim' certificate. In such cases, it will be a term of Contract that there is no Arbitration Clause at all.

VIII. DETERMINATION OF CONTRACT

5.8.0 **Right of Employer to determine Contract:**
The Employer shall be entitled to determine and terminate the Contract at any time should, in the Employer's opinion, the cessation of work become necessary owing to paucity of funds or from any other cause, whatsoever, in which case the value of approved materials at site and of work done to date by the Contractor will be paid for in full at the rate specified in the Contract. Notice in writing from the Employer of such determination and the reason therefor shall be conclusive evidence thereof.

5.8.1 **Payment on Determination of Contract:**
Should the contract be determined under sub-clause 5.8.0 of this Clause, the Contractor shall have no claim to any payment of compensation or otherwise whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of determination of the Contract. The Employer's decision on the necessity and propriety of such expenditure shall be final and conclusive.

5.8.2 **Determination of Contract owing to Default of Contractor:**
If the Contractor should

(i) become bankrupt or insolvent or
(ii) make an arrangement with or assignment in favour of his creditors, or agree to carry out the Contract under a committee of Inspection of his creditors, or
(iii) being a company or corporation, go into liquidation (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) or
(iv) have an execution levied on his goods or property on the works, or
(v) assign the Contract or any part thereof otherwise than as provided in Clause 5.2.11 of these conditions, or
(vi) abandon the Contract or
(vii) persistently disregard the instructions of the Engineer or contravene any provision of the Contract, or
(viii) fail to adhere to the agreed programme of work by a margin of 10% of the stipulated period, or
(ix) fail to remove materials from the site or to pull down and replace work after receiving from the Engineer notice to the effect that the said materials or works have been condemned or rejected or
(x) fail to take steps to employ competent or additional staff and labour as required, or
(xi) fail to afford the Engineer or Engineer's representative proper facilities for inspecting the work or any part thereof as required, or
(xii) promise, offer to give any bribe, commission, gift or advantage either himself or through his partner, agent or servant to any officer or employee of the Employer or to any person of his or on their behalf in relation to the execution of this or any other Contract with the Employer.

5.8.3 Then and in any of the said cases, the Engineer on behalf of the Employer may serve the Contractor with a notice in writing to that effect and if the Contractor does not within seven days after the delivery to him of such notice proceed to make good his default in so far as the same is capable of being made good and carry on the work or comply with such directions as aforesaid to the entire satisfaction of the Engineer, the Employer shall be entitled after giving 48 hours notice in writing under the hand of the Engineer (to rescind the Contract as a whole or in part or parts as may be specified in such notice) and adopt either or both of the following courses :-

(i) to carry out the whole or part of the work from which the Contractor has been removed by the employment of the required labour and materials, the costs of which shall include lead, lift, freight, supervision and all incidental charges.

(ii) to measure up the whole or part of the work from which the Contractor has been removed and to get it completed by another Contractor. The manner and method in which such work is completed, shall be at the entire discretion of the Engineer, whose decision shall be final.

(iii) And in both the cases (a) & (b) mentioned above, Employer shall be entitled

(iv) to forfeit the whole or such portion of the Security Deposit as it may consider fit; and

(v) to recover from the Contractor the cost of carrying out the work in excess of the sum which would have been payable according to the certificate of the Engineer to the Contractor if the works had been carried out by the Contractor under the terms of the contract, such certificate being final and binding upon the Contractor. Provided, however, that such recovery shall be made only when the cost incurred in excess is more than the Security Deposit proposed to be forfeited and shall be limited to the amount by which the cost incurred in excess exceeds the Security Deposit

proposed to be forfeited. The amounts thus to be forfeited or recovered may be deducted from any moneys then due or which at any time thereafter may become due to the Contractor by the Employer under this or any other Contract or otherwise. Provided always that in any case in which any of the powers conferred upon the Employer by - sub-clause 5.8.0 shall have become exercisable and the same not be exercised, the non-exercise, thereof shall not constitute a waiver of any of the conditions thereof and such powers shall notwithstanding the exercisable in the event of any future case of default by the Contractor for which his liability for past and future shall remain unaffected.

5.8.4 **Right of Employer after rescission of Contract owing to default of Contractor:**
In the event of any or several of the courses, referred to in sub-clause 5.8.2 being adopted:

(i) The Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any commitments or made any advances on account of or with a view to the execution of the work or the performance of the Contract and Contractor shall not be entitled to recover or be paid any sum for any work thereto or actually performed under the Contract unless and until the Engineer shall have certified the performance of such work and the value payable in respect thereof and the Contractor shall only be entitled to be paid the value so certified.

(ii) The Engineer or the Engineer's representative shall be entitled to take possession of any materials, tools, implements, machinery and buildings on the works or on the property on which these are being or ought to have been executed, and to retain and employ the same in the further execution of the works or any part thereof until the completion of the works without the Contractor being entitled to any compensation for the use and employment thereof or for wear and tear or destruction thereof.

(iii) The Engineer shall, as soon as may be practicable after removal of the Contractor fix and determine ex-party, or by or after reference to the parties or after such investigation or inquiries as he may consider fit to make or institute and shall certify what amount (if any) has at the time of rescission of the Contract been reasonably earned by or would reasonably accrue to the Contractor in respect of the work then actually done by him under the Contract and what was the value of any unused or partially used materials, any constructional plant and any temporary works upon the site.

(iv) The Employer shall not be liable to pay Contractor any money on account of the Contract until the expiration of the period of maintenance and thereafter until the costs of completion and maintenance damages for delay in completion (if any) and all other expenses incurred by the Employer have been ascertained and the amount thereof certified by the Engineer. The Contractor shall then be entitled to receive only such sum or sums (if any) as the Engineer may certify would have been due to him upon due completion by him after deducting the said amount, but if such amount shall exceed the sum which would have been payable to the Contractor, then the Contractor shall on demand pay to the Employer the amount of such excess and it shall be deemed a debit due by the Contractor to Employer and shall be recoverable accordingly.

IX. SETTLEMENT OF DISPUTE

5.9.0 **Arbitration:**

(i) Any dispute or difference of any nature whatsoever any claim, Gross-claim, or set off the Employer against the Contractor or regarding any right, liability, act, omission or account of any of the parties hereto arising out of or in relation to this agreement shall be referred to the Sole Arbitration of the Principal, Mayoor School, or to an arbitrator who may be nominated by the the Principal, Mayoor School,. The Contractor will not be entitled to raise any objection to any such arbitrator on the ground that the arbitrator is an Officer of the Principal, Mayoor School, or that he has dealt with the matters to which the contract relates or that in the course of his duties as an Officer of the Principal, Mayoor School, he had expressed views on all or any other matters in dispute or difference. In the event of arbitrator to whom the matter is originally referred being transferred or vacating his office for being unable to act for any reason, the Principal, Mayoor School, as aforesaid at the time of such transfer, vacation of office of inability to act may in the discretion of the Principal, Mayoor School, designate another person to act as arbitrator in accordance with the terms of the agreement to the end and intent that the original Arbitrator shall be entitled to continue the arbitration proceeding notwithstanding his transfer or vacation of office as an Officer of Mayoor School, if the Principal, Mayoor School, does not designate another person to act as arbitrator on such transfer, vacation of office or inability of original arbitrator. Such persons shall be entitled to proceed with the reference from the Principal, Mayoor School, or a person nominated by such Principal, Mayoor School, as aforesaid shall act as arbitrator hereunder. The award of the arbitrator so appointed shall be final conclusive and binding on all parties to the agreement subject to the provision of the Arbitration Act. 1940 or any statutory modification or re-enactment thereof and the rules made thereunder for the time being in force

shall apply to the arbitration proceeding under this clause. (b) The award shall be in writing and published by the arbitrator within, two years after entering upon the reference or within such extended time not exceeding further twelve months as the sole Arbitrator shall be a writing under has own hands appoint. The parties here to shall be deemed to have irrevocably given their consent to the Arbitrator to make and publish the award within the period referred to herein above and shall not be entitled to raise any objection or protest there to under any circumstances whatsoever.

(ii) The arbitrator shall have power to order and direct either of the parties to abide by, observe and perform all such directions as the arbitrator may think fit having regard to the matters in difference i.e. dispute before him. The arbitrator shall have all summary powers and may take such evidence oral and / or documentary, as the arbitration in his absolute discretion thinks fit and shall be entitled to exercise all powers under the Indian Arbitration Act. 1940, including admission of any affidavit as evidence concerning the matter in difference i.e. dispute before him.

(iii) The parties against whom the arbitration proceeding have been initiated, that is to say, the Respondents in the proceedings, shall be entitled to prefer a cross-claim, counter-claim or set off before the Arbitrator in respect of any matter in issue arising out of or in relation to the Agreement without seeking a formal reference of arbitration to the Principal, Mayoor School, for such Counter-claim Cross-claim or set off and the Arbitrator shall be entitled to consider and deal with the same as if the matter arising therefore has been referred to him originally and deemed to form part of the reference made by the Director (Personnel).

(iv) The arbitrator shall be at liberty to appoint, if necessary any accountant or engineer or other technical person to assist him, and to act by the opinion so taken.

(v) The arbitrator shall have power to make one or more awards whether interim or otherwise in respect of the dispute and difference and in particular will be entitled to make separate awards in respect of claims or cross-claims of the parties.

(vi) The arbitrator shall be entitled to direct any of the parties to pay the costs of the other party in such manner and to such extent as the arbitrator may in his discretion determine and shall also be entitled to require one or both the parties to deposit funds in such proportion to meet the arbitrators' expenses whenever called upon to do so.

(vii) **Jurisdiction:** The parties hereby agree that the courts in the city of Ajmer alone shall have jurisdiction of entertain any application or other proceedings in respect of anything arising under this agreement and any award or awards made by the sole arbitrator hereunder shall be filed in the concerned courts in the city of Ajmer Only.

SECTION 6

SPECIAL CONDITIONS OF CONTRACT

6.1.0 **Insurance for Works :**

The Contractor at the time of signing the Contract or before commencing the execution of the work without limiting his obligations and responsibilities shall insure the works at his own cost and keep them insured until the virtual completion of the contract against all acts of God including Fire, Theft, Riots, War, Floods, etc. with a Nationalised Insurance Agency in the joint names of the Employer and Contractor (the name of the former being placed first in the policy) for the full amount of the contract. Such policy shall cover the property of the Employer and fees for assessing the claim and in connection with his services generally therein and shall not cover any property of the Contractor or of any sub-Contractor or Employee. The Contractor shall deposit the original policy and receipt for the premiums with the Employer within twenty-one (21) days from the date of signing the contract/commencement of execution of work or unless otherwise instructed by the Employer. In default of the Contractor insuring as provided above, the Employer on his behalf may so insure and may deduct the premiums paid from any moneys due or which may become due to the Contractor. The Contractor shall, as soon as any claim under the policy is settled or the work reinstated by the Insurance Office should elect to do so, proceed with all due diligence with the completion of the works in the same manner as though the misfortune/accident had not occurred and in all respects under the same conditions of contract. The Contractor in case of rebuilding or reinstatement after accident, shall be entitled to such extension of time for completion as the Employer deems fit.

6.1.1 **Insurance in respect of damages to persons and property:**

(i) The Contractor shall be responsible for all injury to persons animals or things and for all structural and decorative damage to property which may arise from the operation or neglect of himself or of any approved sub-Contractor's or Employee's, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this contract. The clause should be held to include any damage to building, whether immediately adjacent or otherwise, and any damage to roads, streets, footpaths, bridges, sewerage, water supply, other services and works forming the subject of this contract by frost or other inclemency of the weather. The Contractor shall indemnify the Employer and hold him harmless in respect of all and any expenses arising from any such injury or damage to persons or property as aforesaid and also in respect of any claims made in respect of injury or damage under any Acts of Government or otherwise and also in respect of any award of compensation of damages consequent upon such claims.

(ii) The Contractor shall reinstate all damages of every sort mentioned in this clause, so as to deliver up the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to the property of third parties.

(iii) The Contractor shall indemnify the Employer against all claims which may be made against the Employer by any member of the public or other third party in respect of works in consequence thereof and shall at his own expense arrange to effect and maintain, until the virtual completion of the contract, with any Nationalised Insurance Agency in the joint names of the Employer and the Contractor against such risks and deposit such policy or policies with the Employer from time to time during the currency of this contract. The Contractor shall similarly indemnify the Employer against all claims which may be made upon the Employer whether under the Workman's Compensation Act or any other statute in force during the currency of this contract or at common law in respect of any employee of the Contractor or any sub- Contractor and shall at his own expense effect and maintain with an approved office a policy of insurance in the joint names of the Employer and the Contractor (the name of Employer appearing first) against such risks and deposit such policy or policies with the Employer from time to time during the currency of the contract. The Contractor shall be responsible for any thing which may be excluded from the Insurance policies above referred to and also for all other damages to any property arising out of and incidental to the negligent or defective carrying out of this contract. He shall also indemnify the Employer in respect of any costs, charges or expenses arising out of any claim or proceedings and also in respect of any award of or compensation of damages arising therefrom.

(iv) The Employer shall be at liberty and is empowered to deduct the amount of any damage, compensation costs, charges and expenses arising or accruing from or in respect of any such claim or damage from any sum or sums due to or become due to the Contractor including the Security Deposit.

(v) If the Contractor fails to comply with the terms of these conditions, the Employer may insure the works and may deduct the amount of the premiums paid from any moneys that may be or become payable to the Contractor or may as an option, not release running payment to the Contractor till the Contractor shall have complied with the terms of this condition.

(vi) Such insurance, whether effected by the Employer or the Contractor will not limit or bar the liability and obligation of the Contractor to deliver works to the Employer complete in all respects according to the contract. In case of loss or damage due to any of the aforesaid causes the moneys payable under any such insurance shall be received and retained by the Employer until

the works are finally completed and such moneys shall then be credited to the Contractor in final settlement of accounts.

6.2 **Issue of Materials by the Employer:**
For execution of work under this Contract, the following materials are also likely to be procured and supplied by the Employer, to the site:

(i) Chemicals for Anti termite treatment.
(ii) All Hardware for woodwork including accessories,
(iii) All Chinaware, taps & faucets and toilet requisites for toilets, kitchens, pantries etc.,
(iv) All light fixtures and fittings etc.,
(v) Flooring stone such as Marble, Kota, granite stone, Sandstone such as Mandana, Red Agra, Dholpur etc.
(vi) Ceramic tiles for wall and floors.
(vii) Chemicals for Water proofing treatment
(viii) In addition to the above the Employer reserves the right to supply any material (in entirety or in part) for use in the works.

6.3 **Firm Price Contract:**
Prices quoted by the Contractor shall be firm. **No escalation in prices shall be payable on any account whatsoever**.

6.4 **Sample Work:**
Upon the request of Principal, Mayoor School, or his nominee samples of works shall be prepared by the contractor without charging any costs for the same. The samples so made shall be removed if required without charging any costs.

6.5 If any ambiguity arises to the meaning and intent of any portion of specifications and drawings or to the execution or quality of any work or material or as to the measurement of the works, Employer shall have the power to correct any errors, omissions or discrepancies in the Specifications, Drawings, classification of the work or materials and whose decision in the matter shall be final and conclusive. In case of discrepancy between schedule of quantities, Specifications and/or drawings, the following order of preference shall be observed:-

(i) Description of items in the Schedule of quantities.
(ii) Technical Specifications and Special Conditions of Contract.
(iii) Working Drawings.
(iv) C.P.W.D. Specifications
(v) P.W.D. Specifications
(vi) Indian Standard Specifications
(vii) General Conditions of Contract

6.6 The contractor shall have to work in close co-ordination with the other Contractors (Electrical, Sanitary, Carpentry, Steel and Aluminium works etc.) who may appointed separately for carrying out related works for the construction of the Construction of Primary School SECOND FLOOR at Mayoor School, Ajmer.

SECTION - 7

TECHNICAL SPECIFICATION FOR ALL CIVIL WORKS

7.1 Indian Standards:

a) All materials shall conform to the latest edition of the Indian Standard Specifications. Standards issued elsewhere may be used only if approved by the Engineer and for those materials only for which appropriate Indian Standards do not exist.

b) All works shall be carried out in general as per the latest Central PWD specification with up to date correction slips, amendments and additions.

7.2 Sampling and Testing: All materials used in the works shall be subjected to Inspection and test. Samples of all materials proposed to be employed in the permanent works shall be submitted to the Engineer for approval, before they are brought to the site. These samples shall be submitted 15 days in advance when required for works. After the sample is approved the material shall be arranged and brought to site within a fortnight. Samples provided to the Engineer or his representatives for their retention are to be in labelled boxes suitable for storage.

7.3 Storage of Materials: All materials used in the works shall be stored on racks, supports, in bins, under cover etc. as appropriate, to prevent deterioration or damage from any cause whatsoever to the entire satisfaction of the Engineer. Cement shall be stored in such quantities as can be consumed within a short time after receipt from the manufacturers. It shall be stored in such a manner as to permit easy access for proper inspection and in a suitable weather tight building to protect it from dampness and to minimise deterioration by using water proofing membranes.

7.4 LIST OF MATERIALS OF APPROVED MAKES/BRANDS		
S.NO.	**MATERIALS**	**BRAND NAMES**
1.	Grey Cement	a) Shree Ultra OPC b) Ultratech OPC c) Ambuja OPC
2.	Steel Reinforcement (Primary manufacturer)	a) SAIL b) TISCO c) Jindal
3.	Steel Reinforcement (Secondary manufacturer)	a) Kamdhenu b) Rathi c) Bansiwala
4.	Flush doors	a) Green b) Century
5.	Marine Plywood/ BWP plywood for panelled shutters	a) Kitply / Duro b) Anchor c) National
6.	Particle board for panelled shutters	a) Indian Plywood Manufacturing Co. b) Duroboard c) Bhutan Board
7.	Paints & Distemper	a) Asian b) Berger c) Nerolac d) ICI
8.	Water proof cement paint	a) Super Snowcem
9.	Water proofing Compound	a) Cico b) Pidilite c) ACC
10.	Ceramic Glazed Tiles	a) Kajaria (first quality) b) Johnson (first quality) c) Orient Bell (first quality)
11.	Vitreous China Sanitary ware	a) Hindustan Sanitary Ware b) Parryware c) Cera
12.	Plastic W.C. seat and cover	a) Commander I.S. b) Admiral (solid heavy duty)
13.	Stainless Steel Sinks	a) Nirali b) Diamond c) Parryware
14.	C.P. brass fittings fixtures & C.P. Waste	a) Jaquar b) Ess Ess
15.	Cast iron items (C.I.)	a) BC b) HIF c) RIF
16.	Cast iron soil pipes & fittings	a) A-1 b) SRIF c) SKF
17.	Cast iron pressure pipes & fittings	a) A-1 b) SRIF c) Rly. Equipments & Engg.
18.	C.I. Spun Pipes	a) NECO Centi b) Tata c) BST
19.	G.I. pipes	a) TATA b) Jindal (Hissar)

7.4 LIST OF MATERIALS OF APPROVED MAKES/BRANDS		
S.NO.	**MATERIALS**	**BRAND NAMES**
20.	uP.V.C. pipes and fittings	a) Supreme b) Prakash c) Prince
21.	PPRC fittings	a) Supreme
22.	G.I Fittings	a) Unik b) R-Brand
23.	Aluminium Accessories	a) Everite b) Classic c) Argent d) Crown
24.	Gunmetal Valves	a) Leader b) Sant
25.	Brass Stop & Bib Cocks	a) Leader b) L & K
26.	Ball valve with Float	a) Leader b) L & K
27.	Stone ware pipes and Gully traps	a) Perfect b) Anand
28.	CI Covers and Manholes	a) RIF b) BC (Agra) c) NECO
29.	SFRC Covers for Manholes	a) KK b) Steel fiber Products c) Cemo Crete Industries
30.	RCC Pipes	a) Usha Spun Pipes b) Pragati
31.	S/S CI Pipes and Fittings	a) IISCO b) Kesoram c) SIF
32.	CI Sluice Valve and Non Return Valve	a) Kirloskar b) I.V.C c) Leader
33.	Factory made door/window shutters	Approved Factory
34.	Factory made door/window, pressed steel frames	Approved Factory
35.	Glass	a) Modi float Glass b) Saint Gobain
36.	Mirror	a) Modi float Glass b) Saint Gobain
37.	Bitumen	a) Indian Oil Corporation b) BPCL
38.	PVC Water Storage tanks	a) Sintex
39.	PVC Doors and Window Frames and shutters	a) Sintex
40.	Aluminium Glazing and Partitioning work	a) Jindal b) Hindalco
41.	Pumps	a) Kirloskar b) Jyoti c) Wasp d) Crompton Greaves

7.4 LIST OF MATERIALS OF APPROVED MAKES/BRANDS		
S.NO.	**MATERIALS**	**BRAND NAMES**
42.	Electric Motors	a) Siemens b) Kirloskar c) Crompton Greaves
43.	PVC insulated copper conductor wires 1100V grade and Flexible wires	a) Havells b) RR Kabel c) Finolex
44.	Telephone Wire and TV Cables	a) Delton b) Skytone c) Skyline
45.	HRC switches and fuses	a) Siemens b) English Electric c) L & T
46.	MCB Dbs/MSBs	a) MDS (Load Kontakt) b) Standard Switchgear c) Indo Asian d) Havells
47.	Switches, sockets, bell push holders, ceiling rose, etc.	a) Anchor b) SSK c) MK
48.	PVC conduit (2mm only)	a) Polypack b) BEC c) NTC
49.	M.S. conduit	a) Steel Craft b) BEC
50.	Distribution board	Fabricated with GE Alsthom or L & T or Crompton Greaves or Siemens SFU switches
51.	Bakelite Sheet	a) Hylam b) Formica
52.	IP Dome Camera	a) Dahua
53.	IP Bullet Camera	a) Dahua
54.	CAT 6 Network Cable	a) DLINK

Notes:

1. The Contractor shall supply ISI marked material as per any of the makes or brands indicated above. In case ISI marked material for any of the brands is not being manufactured by the firm(s), first quality material shall be accepted. The samples of the material shall in either case have to be got approved from the Architect/Engineer.

2. Material where no make/brand has been mentioned, ISI marked samples shall be submitted by the Contractor for approval of Architect/Engineer. For those class of materials, where no firm exists with ISI approval, sample of first quality material of the firm shall be submitted for the approval of the Engineer.

3. Any variation from the above mentioned makes/brands will require specific approval of Architect/Engineer.

SECTION – 8

TECHNICAL SPECIFICATION FOR INSPECTION, TESTING & CONDITIONS FOR ENTIRE ELECTRICAL WORK

8.1 General:

Inspection and testing shall be done in accordance with the IEE Wiring Regulations, the requirements of this Section and as indicated.

Inspection shall include a physical check that all equipment has been securely fixed and that all electrical connections are mechanically sound.

8.2 Information:

For equipment supplied under the contract, the Contractor shall obtain from manufacturers the time/current characteristics of all protective devices for automatic disconnection of supply and provide copies to the Engineer-in-Charge and to the person or persons carrying out the inspection and testing, in addition to meeting the requirements of clause.

8.3 Testing Methods:

The Engineer-in-Charge shall be notified of the method to be used for each type of test and the notification shall be given not less than 28 days before the final tests are to be made. The tests shall be carried out in accordance with the methods set out in the IEE Wiring Regulations.

For testing, continuity of protective conductors and equi-potential bonding AC source shall be used unless the Engineer-in-Charge agrees otherwise.

The method used to verify the effectiveness of the protection afforded by a residual current-operated device shall give the operating time and the current used shall not exceed 100% of the nominal setting of the device. For a fault voltage operated device, the test voltage between the exposed conductive part and earth shall not exceed 50 volts. In addition to the tests simulating an appropriate fault condition, any test facility incorporated in the device shall be operated to test its effectiveness.

High Voltage tests on LV cables and factor assemblies shall comply with the requirements for site testing in the appropriate British Standards.

Alternative methods to those set out in the IEE Wiring Regulations may be proposed for the approval of the Engineer-in-Charge, but they shall be not less effective than those in the Regulations.

Where necessary to prevent damage to components of equipment, the equipment shall be disconnected for the duration of the relevant tests.

8.4 Power Cables:

Tests shall be made immediately on completion of the installation of power cables to demonstrate that the phase sequence is correct at all end connections.

LV cables not required to be high voltage tested, shall be tested for insulation resistance as soon as their installation is complete. The test voltage shall be 500V DC for installations rated up to 500V and 1000V Dc for installations rated up to 1000V. Tests shall cover all permutations between each conductor, screen, metallic sheath, armour and earth.

The over sheaths of cables laid underground shall be given a voltage withstand test after backfilling of the trenches is complete but before termination.

8.5 Control and Communication Cables:

Cables shall be tested as soon as their installation is complete to ensure that the cores are continuous and they have not been crossed and the insulation resistance is satisfactory. Insulation tests shall cover all permutations between each conductor, screen, metallic sheath, armour and earth.

For polyethylene and dry paper-insulated communications cables, the insulation resistance for each conductor shall be not less than 1500 L mega ohms, where L is the cable length in Kilometres. The

measured resistance of each conductor shall not exceed the calculated resistance by more than 5%; the calculated value will be made available by the Engineer-in-Charge.

8.6 Conduit and Trunking:

Where conduit is cast in situ in reinforced concrete, it shall be checked for freedom from blockage and steel conduit shall be tested for electrical continuity as soon as the shuttering has been removed.

Steel conduit and bus duct systems shall be inspected and tested before any wiring is installed; under floor ducting shall be inspected and tested before screeding.

8.7 Earth Electrodes:

The resistance of each earth electrode, whether for earthing of protective conductors, lightning protection or an electrical system, shall be checked immediately after installation of the electrodes and the results submitted to the Engineer-in-Charge.

8.8 Earth Fault loop impedances:

The measured earth fault loop impedance for each circuit shall be checked against the maximum value as indicated.

Where the maximum value is exceeded the Engineer-in-Charge shall be informed.

8.9 Records and Certificates:

Inspection and test results shall be recorded on the forms provided by the Authority. Two copies shall be submitted to the Engineer-in-Charge within 7 days of each test.

When all inspections and tests results are satisfactory, a Completion Certificate and an Inspection certificate shall be given to the Engineer-in-Charge not later than the date of completion of the works. The

certificates shall be given in the form laid down in the IEE Wiring Regulations for electrical installations and BS 5266 for emergency lighting systems.

The values of prospective short-circuit current and earth fault loop impendence at the origin of the installation shall be recorded on the Inspection certificates.

8.10 DRAWINGS AND DOCUMENTS BY CONTRACTOR:

8.10.1 Extent of Provision: Unless otherwise indicated, the Contractor shall provide the shop drawings and documents specified in following clauses. The numbers of sets of drawings and documents to be supplied shall be as indicated.

8.10.2 Shop Drawings and Documents:

Shop drawings and documents including diagrams and schedules shall show the details of the Contractor's proposals for the execution of the works and shall include everything necessary for the following purposes:

a) To illustrate in details, the arrangement of the various sections of the works and to identify the various components;
b) To integrate the works with the detail of the building and other installations.

Shop drawings shall include:

a) General layout drawings showing the location of all equipment including cable; cable tray, conduit ducting and earth electrodes;
b) Detailed layout drawings showing the location of all equipment including cable, cable tray, conduit and ducting in switch rooms and plant rooms;
c) Assembly drawings of factory Built equipment and site built assemblies;
d) Detailed layout drawings showing the connection of cable and conduit to equipment;
e) Detailed layout drawings showing the connections through ceiling voids and vertical shafts;
f) System diagrams, circuit diagrams and wiring diagrams for all installations and equipment.
g) Diagrams shall comply with relevant IS. Interconnection diagrams shall indicate the type of cable, conductor size and terminal numbering.

8.10.3 As Built Drawings:

As-built drawings, including diagrams and schedules shall show all the information necessary so that each installation can be operated, maintained, inspected and tested so as to prevent danger, as far as is reasonably practicable. They shall incorporate the information necessary for the identification of the devices performing the functions of protection, isolation and switching, and their locations. The value of prospective short-circuit current and earth fault loop impedance at the origin of the installation shall be recorded on the appropriate system diagram.

Circuit details including loading, route, and destination and where buried, the depth below finished ground level shall be shown for each cable, conduit, and ducting. Conductor size and material and the type of insulation of all cables shall be shown together with the number of cores in each cable, the number of cables in each conduit, trunking or ducting. Where identification is by colour of insulation or sheath, this shall be shown. Joints and draw boxes shall be shown.

Drawings shall indicate whether conduit or ducting is surface mounted, concealed in ceiling, spaces in wall chases, in floor screeds.

All earthing conductors, main equi-potential bounding conductors, main earthing terminal or protective conductors and supplementary equi-potential bonding conductor shall be identified with function, origin

route, destination, conductor size and material, type of insulation and where buried, the depth below finished ground level test points shall be indicated.

Earth electrodes shall be identified to their types, dimensions, material and depth below finished ground level. The nature of the soil and any treatment that has been given to it or special fill that has been used in the installation shall be identified

Details of each item of equipment including luminaires shall include electrical characteristics, classification, degree of protection against ingress of solids and liquids, class of protection against corrosion and manufacturer's name and reference.

Diagrams shall be supplemented with physical arrangement drawings to assist the location and identification of component parts of equipment.

During the course of the works, the contractor shall maintain a fully detailed record of all changes to ensure that the as-installed drawings are in all respects accurate.

Each drawing shall be in accordance with relevant IS to ensure suitability for micro-filming and shall be on durable translucent material, other than paper, of a standard size AO to A4 in accordance with relevant IS. The words 'AS-BUILT' shall be place in 19 mm block letters adjacent to the title block of each drawing together with the name of the site and the section of the works, the title of the installation, the date of completion of the works, the Authority's contract number and the name of the Contractor.

A draft of each as built drawing shall be submitted to the Engineer-in-Charge before final issue is made.

8.11 Maintenance and Operating Instructions:

For each electrical installation, system and individual equipment forming part of the works, the maintenance and operating instructions shall include:

a) A description of the extent and manner of operation, including duration periods of standby systems;

b) A description of the method used for compliance with Regulation 413-3 of the IEE wiring Regulations together with time/current characteristics for all protective devices or automatic disconnection of supply.

c) Copy of the inspection certificate and all the test records.

d) A copy of any certificates of compliance with relevant standards or schemes as may be required.

e) Comprehensive instructions for the switching on, operation, switching off and isolation, and for dealing with emergency conditions.

f) Instructions for any precautionary measures necessary.

g) Instructions for servicing, including frequency and materials to be used, to maintain the equipment in good and safe condition.

h) The names and addresses of suppliers of all major components together with the type and model reference, serial number, duty rating and the order number and date.

Maintenance and operating instructions shall be indexed and contained in ring binders with stiff covers. The name of the site and the Authority's contract number shall be printed on the front and spine with, where more than one volume is necessary, a suitable identification title. The date of completion of the works shall be included on a flyleaf.

Copies of manufacturer's data may be incorporated to supplement the descriptions and instructions. Only data relevant to the works shall be included. Where non relevant data appears on the same sheet, it shall be cleared marked to show that it is not applicable. The data shall be cross referenced within the text and

included in the index; if possible, it shall be contained in the ring binders, but where this is not possible, suitably protected box files or folder shall be provided.

A draft of the maintenance and operating instruction shall be submitted to the Engineer-in-Charge before the final documents are issued.

8.12 SAFETY REQUIREMENTS:

Scope:

Safety procedures as laid down in Indian Standards shall be strictly followed during erection and commissioning.

The safety provisions required under the IEE Rules shall be provided for which no extra payment shall be made.

SECTION – 9

TECHNICAL SPECIFICATION FOR FIRE FIGHTING SYSTEM

9.1 General

Work under this subhead is time-bound and has to be completed within the time limit set in the tender. Work shall be executed in accordance with an agreed schedule which shall be submitted by the tenderers along with offer and agreed to by owners.

9.2 Scope of Work

The scope of work in this subhead shall consist of furnishing all labour, materials, equipment and appliances necessary and required to completely do all work relating to the supply, installation, testing & commissioning of Fire Fighting Systems for Existing School Building at Delhi as described herein after and shown on the drawings. The scope of work in general shall include the following.

i) Fire Fighting Pumps & Accessories and related electrical works

ii) External & Internal Fire Hydrant System.

iii) Hand Appliances

Without restricting to the generality of the foregoing, the work shall include the following:

A. Hydrant System Covering the entire complex and consisting of the following:

i. Terrace Fire electric Pump of 450 LPM at 35 M pump for Dn. comer Internal Hydrant Systems
ii. Other piping system ancillaries such as Suction and Delivery Headers, Air Vessel, Pressure Gauges, Pressure Switches, Pump Panel etc. as required.
iii. Internal Hydrant system where required with single headed landing valves on each floor accompanied by 1 number swinging type Hose Reel, 2 numbers RRL Hoses, 1 numbers of Branch Pipe etc. all housed in the Hose Cabinet.

B. Hand appliance as per Bill of Quantities.

<u>Approval of Drawings</u>

To obtain the approval of the relevant schemes drawings before actual installation at site and to get the complete installation inspected and passed by the concerned authorities, as may be

necessary as per local bye laws. (Any fee payable to the local bodies for such activities shall be reimbursed by the AAI on production of receipt).

9.3 **Contractor's Experience**

9.3.1 Contractors shall engaged specialist agency only for this work of Fire Fighting systems.

9.3.2 The selected specialist agency must have sufficient experience in the execution of turn-key projects as specified.

9.3.3 Contractor must submit with the tender a list of similar jobs carried out by him as required along with the name of works, name and address of clients, year of execution, capacity of plant and value of work.

9.4 **Technical Information**

9.4.1 Contractor shall submit along with the tender copies of detailed specifications, cuts, leaflets, and other technical literature of equipment and accessories offered by him.

9.4.2 Contractor's attention is specially invited to the special conditions and other clauses in the agreement which required the contractor to :-

a. Submit detailed shop drawings.
b. Use material of specific makes and brands.
c. Obtain all approvals from Fire Fighting authorities.
d. Execute the entire work on a turn-key basis so as to provide a totally operating plant.

9.5 **Exclusions**

Work under this contract does not include the following work:-

9.5.1 Electrical cables up to incoming motor control centre.

9.6 **Site Accessibility**

9.6.1 The equipments are to be located in pump house located within the Plant room. On terrace Level

9.6.2 The equipment must be carried from the goods receiving station to the site in an extremely careful manner to prevent damage to the equipment building or existing services.

9.6.3 Contractor must visit the site and familiarize himself with above problems to ensure that the equipment offered by him are of dimensions that they can be carried and placed in position without any difficulty.

9.7 **Approvals**

The contractor shall prepare all submission drawings and obtain all approvals of fire fighting works from fire fighting authorities.

9.8 **System Description**

9.8.1 The Hydrant System shall comprise of AC motor driven pump set, for pressurisation with all required accessories including valves, special fittings, instrumentation, control panels and any other components required to complete the system in all respects.

9.8.2 The Hydrant System shall be automatic in action and shall be laid covering the entire area externally and all the floors internally with independent piping system.

9.8.3 The Hydrant System shall be kept pressurised at all times. The proposed Pump shall take care of the leakages in the system, pipe lines and valve glands.

9.8.4 The pressure in the hydrant pipe work shall be kept constant at 3. Kg/cm^2. In the event of fire when any of the hydrant valve in the network is opened, the resultant fall in header pressure shall start the AC motor driven fire pump through pressure switches automatically.

9.8.5 However, shutting down of the pump set shall be manual except for the Terrace Pump which shall start and stop automatically through pressure switches. In addition to auto start arrangements,

9.8.6 The piping for the hydrant system in the yard shall be laid in soil 1 Metre deep or in rectangular Trench. The pipe laid in soil shall be protected as specified in para 1.9.3 below. The scope of work includes necessary excavation of trench and back filling the same. The scope of work also includes necessary watering, ramming, removing the surplus earth from the site and construction of brick masonary pedestal at 3 Mtrs intervals. Pipes shall be cleaned before wrapping and coating.

9.8.7 The hydrants shall be placed at a regular spacing of 45m centre to centre. The following accessories are proposed near each yard hydrant.

i) One no. gunmetal single headed hydrant valve.
ii) Two nos. RRL Hoses of size 63mm dia x 15m long.
iii) One no. gunmetal Branch pipe.

Gun metal hydrant valve, RRL hose and gunmetal branch pipe will be accommodated in a MS hose box mounted on brick pedestals.

9.8.8 The Internal Hydrant System (Dn. comer) shall be provided at points as indicated on the drawing on each floor.

9.8.9 The hydrant point shall be directly tapped from the Dn. take pipes, and shall be furnished with required accessories such as

i) One no. gunmetal single headed hydrant valve.
ii) Two nos. RRL Hoses of size 63mm dia x 15m long.
iii) One no. first aid hose reel full swinging type 20mm dia x 30m long.
iv) One no. gunmetal Branch pipe.

The hydrant dn. commer shall be terminated with air release valve at the highest points to release the trapped air in the pipe work.

9.8.10 To compensate for slight losses of pressure in the system and to provide an air cushion for counteracting pressure surges/water hammer in the underground pipe work Air Vessels shall be furnished in the pump room near fire pumps. The air vessel shall be normally partly full of water and the remaining being filled with air which shall be under compression when the system is in normal operation.

9.8.11 The entire Dn. comer System shall be fed from the water supply (Static O.H.Water Tank). The Bidder shall note that the Pump House is located adjacent to the Fire Water Tank.

9.9 GENERAL SPECIFICATIONS

9.9.1 Pipes and Fittings

Pipes for Dn. comer system shall be of black steel and heavy class. Pipes upto 150mm dia shall conform to IS-1239. Pipes with dia 200mm and above (6mm thick) shall confirm to IS-3589. All

pipes shall be **as per approved makes (C-class)**. Fittings for black steel pipes shall be malleable iron suitable for welding or approved type cast iron fittings with tapered screwed threads.

9.9.2 **Jointing**

Joint for black steel pipes and fittings shall be metal-to-metal tapered thread or welded joints. A small amount of red lead may be used for lubrication and rust prevention in threaded joints.

Joints between C.I. or black steel pipes, valves and other apparatus, pumps etc. shall be made with C.I. or M.S. flanges with appropriate number of bolts. Flanged joints shall be made with 3mm thick insertion rubber gasket.

Note: Joints for pipes and fittings upto 50mm diameter shall be threaded joints using Teflon Tape or equivalent bonding tape on the threads. Joints for pipe and fittings above 50mm diameter shall be welded joints.

9.9.3 **Pipe Protection**

i. All pipes in under ground masonry trenches/service tunnels, above ground and in exposed locations shall be painted with one coat of red oxide primer and two or more coats of synthetic enamel paint of approved shade.
ii. Pipes in wall chases shall be protected from corrosion by 2 coats of bituminous paints.
iii. Protection of Underground Pipes: Corrosion protection tape shall be wrapped on M.S. Pipes to be buried in ground. This corrosion protection tape shall comprise of coal tar/asphalt component supported on fabric of organic or inorganic fibre and minimum 4 mm. thick and conform to requirement of IS : 10221 – code of practice for coating and wrapping of under ground mild steel pipe line. Before application of corrosion protection tape all foreign matter on pipe shall be removed with the help of wire brush and suitable primer shall be applied over the pipe thereafter. The primer shall be allowed to dry until the solvent evaporates and the surface becomes tacky. Both primer and tape shall be furnished by the same manufacturer. Corrosion protection tape shall then be wound around the pipe in spiral fashion and bounded completely to the pipe. There shall be no air pocket or bubble beneath the tape. The overlaps shall be 15 mm and 250 mm shall be left uncoated on either end of pipe to permit installation and welding. This area shall be wrapped in accordance with the manufacturer's recommendations. If applications is done in cold weather, the surface of the pipe shall be pre-heated until it is warm to touch and traces of moisture are removed and then primer shall be applied and allowed to dry.

9.9.4 Installation of Pipes

All pipes shall be adequately supported from ceiling or walls by structural clamps fabricated from M.S. structural e.g. rods, channels, angles and flats. All clamps shall be painted with one coat of primer and two coats of black enamel paint. The contractor shall provide inserts at the time of slab casting or provide suitable anchor fasteners.

The pipe supports or hangers shall be designed to withstand combined weight of pipe, pipes fittings, fluid in pipe and insulation. Pipe supports shall be of steel and coated with rust preventing paint

and finished with two coats black enamel paint. The maximum spacing for pipes supports shall be as below:

Pipe (MM)	Spacing (MTR)	Size of support
Up to 25	2.0	6mm
32 to 65	2.4	8mm
75 to 125	2.7	10mm
150 & above	3.0	12mm

Pipes supports shall be spaced at maximum interval of 1.5 mtrs. on either side of heavy fitting and valves. Wherever piping passes through walls, pipes sleeves of diameter larger than that of piping shall be provided. Pipe sleeves shall be of steel or cast iron pipe.

The underground piping shall be supported with **brick masonary pedestral** blocks of suitable size and strength provided at an interval of 3.0 mtrs. The pipes shall be laid at 1 mtr depth (top of the pipe) and trench excavated for sufficient width. The rate for pipe shall include the scope of excavation/refilling the trench. 1:2:4 concrete thrust blocks are also to be provided at turning of pipe. The cost of installation includes concrete pedestals etc. as required and to be included in the item rate.

9.9.5 **Orifice Flanges**

Contractor shall provide orifice flanges fabricated from 6mm thick stainless steel plates on the branch lines feeding different zones/floors so as to allow required flow of water at a pressure of

3.5 kg/sq.cm. for each hydrants. The contractor shall design the orifices to ensure the required pressure.

9.9.6 **Air release valve**

The air release valve shall be in brass construction with nylon ball with in-built non-return valve. The valve shall be automatic type.

9.9.7 **Valves & Other Accessories**

9.9.7.1 **General**

Each valve body shall be marked with cast or stamped lettering giving the following information's:

a) The manufacturer's name or trade mark
b) The size of the valve
c) The guaranteed working pressure

Isolating valves on the water supply lines shall be full bore ball valve type for pipe diameters upto 50mm. For 65mm dia and above these shall be butterfly valves.

9.9.8 **Full Way Ball Valve**

The valves shall be of full bore type and of quality approved by the Engineer-in-charge. The body and ball shall be of copper alloy and stem seat shall be of Teflon.

9.9.9 **Butterfly Valves**

The valve shall of cast iron conforming to relevant IS:13095. The valve shall be of quality approved by Engineer-in-charge.

9.9.10 **Non-Return Valves**

Non-return valves are to be IS:5318 manufactured from gun-metal or dezincification resistant brass.

9.9.11 **Drain Valve**

Drain Valves are to be provided at all low points in the system for draining the water. These shall be 40mm dia full way ball valve fixed on 40mm dia black steel pipe.

9.9.12 **Inspection & Testing Assembly**

Inspection and testing of the Hydrants system shall be done by providing an assembly consisting of gunmetal valves, gunmetal sight glass, bye-pass valve.

9.9.13 **Pressure Switches**

Pressure switches shall be differential type for operation of all pumps and for the various duties and settings required. Pressure switches shall be for heavy duty operation and of approved make. All pressure switches shall be factory calibrated.

9.10 **External Fire Hydrants**

Yard Hydrant valves shall be single headed as per IS : 5290. The valve shall be complete with hand wheel, quick coupling connection spring loaded type and gun metal blank cap. The Yard

Hydrant shall be laid on 100mm dia Hydrant Ring Main, / down Comer branched off to 80 mm dia and Stand Post of 80mm dia.

9.11 **Internal Landing Valves**

The internal landing valves shall be double-headed made of gun metal and conforming to IS:5290. It shall be complete with hand -wheel, quick coupling connection spring loaded type and blank cap.

9.12 **Hose pipes, Branch Pipes and Nozzles**

Hose Pipe: Hose pipe shall be rubber lined woven jacketed and 63mm in diameter. They shall conform to type-2 (Reinforced rubber lined) of IS:639-1979. The hose shall be sufficiently flexible and capable of being rolled.

Each run of hose pipe shall be complete with necessary coupling at the ends to match with the landing valve or with another run hose pipe or with Branch pipe. The couplings shall be of instantaneous spring lock type.

Branch Pipe: Branch pipe shall be of gunmetal 63mm dia and be complete with male instantaneous spring lock type coupling for connection to the hose pipe. The branch pipe shall be externally threaded to receive the nozzle.

Nozzle : The nozzle shall be of gunmetal, 20mm in internal diameter. The screw threads at the inlet connection shall match with the threading on the branch pipe, the inlet end shall have a hexagonal head to facilitate screwing of the nozzle on to the branch pipe with nozzle spanner.

End couplings, branch pipes, and nozzles shall conform to IS:903-1985. two hoses of 15 mtr. Lengths with couplings shall be provided with each external (yard) hydrant. One nozzle and one branch pipe with coupling shall be provided with each yard hydrant.

9.13.1 **External Fire Hose Cabinet**

The external fire hose cabinet to accommodate the hose pipes, branch pipe nozzle and the hydrant outlets shall be fabricated from 1.5mm thick steel sheet. This shall be lockable and provided with center opening glazed doors.

The support for hose cabinet shall be of brick work up to a height of 0.5m above ground level. The depth of footing for this support shall be minimum 50cm below ground level, resting on leveling course of minimum 10cm of PCC (1:5:6). The brickwork shall be plastered in cement mortar (1:6). The hose cabinet shall be painted red and stove enameled.

9.13.2 **Internal Fire Hose Cabinet**

Each internal fire hydrant valve shall be housed in a cabinet of size indicated on drawings. Each internal fire hose Cabinet shall hold double headed hydrant, 2 Hoses and 1 Branch pipes and 1 no. first aid hose reel mounted on a drum.

i. The cabinet shutters & frames shall be fabricated from boxed steel sections and MS plate 2mm thick.
ii. The front glass of shutters shall be 5.0 mm thick clear glass and shall be held by means of rubber. Locking arrangement shall also be made with one number of mortice lock of approved make. A separate Key Box of 16 mm thick MS sheet with glass facing shall be provided.
iii. The Shutter shall be given a powder coat finish in post office red colour.

9.14 **Hose Reel**

The hose reel shall be directly tapped from the riser through a 25 mm dia pipe, the drum and the reel being firmly held against the wall by use of dash fasteners. The Hose Reel shall be swinging

type (180 degrees) and the entire Drum, Reel etc shall be as per IS:884. The rubber tubing shall be of approved quality and the nozzle shall be 6 mm dia shut off type.

9.15 Fire **Brigade inlet Connections**

One set of 2 ways collecting head Fire Brigade connection shall be provided at the location indicated in the drawing.

The inlet to the riser shall be with 100mm dia sluice valve and non-return valve. The scope shall include providing necessary reducers, tees bends and special fittings as required. Necessary enclosure made of 2mm thick sheet metal with support shall be provided, as in the case of hose cabinets.

9.16 **AUXILIARY PUMPING EQUIPMENT (Terrace Pump)**

9.16.1 **Scope**

This section covers the details of requirements of the auxiliary equipment necessary for the operation of the fire pumps and the wet-riser system.

9.16.2 **Drive**

The pump shall be directly driven from the electric motor. Flexible coupling and coupling guard shall be provided.

9.16.3 **Capacity**

The discharge and head of the Terrace pump shall be as mentioned in Bill of Quantities.

Terrace pump shall be Horizontal mono block/coupled type. The pump casing shall be of cast iron and parts like impeller, sleeve, wearing ring etc. shall be of non-corrosive metal like bronze, brass or gunmetal. The shaft shall be of stainless steel.

Bearings of the pump shall be effectively sealed to prevent loss of lubricant or entry of the dust or water. The pump casing shall be designed to withstand 1.5 times the working pressure.

9.16.4 **Motor**

The motor shall be squirrel cage A.C. induction type suitable for operation on 415 volts 3 phase 50 Hz, system. The motor shall be totally enclosed fan cooled type confirming to protection clause IP 21 of IS 4691. The class of insulation shall be B, synchronous speed shall be 2900 RPM The motor shall conform IS 325-1978 and rated for continuous duty.

9.16.5 **Motor Starter**

The motor starter shall be automatic star delta type with overload trip, but without under voltage/no volt trip. Starter shall conform to IS 1822-1967.

9.17 **Pipe Work**

The piping for exhaust outlet as well as fuel piping between fuel tank ad the engine shall be with Medium class M.S.

9.18 **Anti Vibration Mounting**

Suitable vibration mounting duly approved by engineer-in-charge shall be employed for mounting the unit so as to minimize transmission of vibration to the structure. The isolation efficiency achievable shall be clearly indicated in the report, which will be submitted to engineer-in-charge before installation.

9.19.1 **Incomer Section & outgoing section**

Incomer section:

1 no. 63 amps TPN MCCB unit complete. One set of 96 mm square digital Ammeter (0-200 Amps) complete with built in selector switch and CTS. One set of 96 mm square digital Voltmeter with built

in selector switch (0 - 500 V) complete with control fuses and selector switch. One set of phase LED indicating lights with control fuses. One set of 4 strips of 63 Amps aluminium busbars.

Outgoing feeder

i. One number of 63 Amps rated TPN MCCB (25 KA, Ics = Icu) unit- complete, ML 1.5 type Contactor for D O L starting with overload relay, start and stop button, digital Ammeter, CTS

and selector switch, phase indicating lights, Auxillary contacts for interlocking/sequence of operation, control terminals complete in all respect for Terrace Fire Pump Pump.

ii. Control Wiring from Pressure Switches of different settings in Terrace Fire Pumps, for sequence of operation shall be included to complete the system.

iii. Colour code with ferrule marking shall also be made.

iv. The cabling shall be PVC insulated FRLS and aluminium / copper conductor cable of 1100 volts grade conforming to IS as required from Fire Pump Board to motor and cable of suitable size as per BOQ.

9.19.2 **Electric Fire Pump Section**

This section shall incorporate the following facilities.

a. Suitable capacity MCCBS
b. Control system components and equipment such as relays, contractors, timers etc. for automatic operation.
c. Starter Unit, Current Transformer and digital ammeter.
d. LED Indication lamps, their fuses, terminal block, push buttons, control and selector switches etc. are as required.
e. Pump lock out devices due to faults or abnormalities as specified in operating sequence.
f. Visual/audio alarms, indications and communications facility as specified in operating sequence.
g. Necessary inter-connection and control wiring etc.

9.19.3 **Engine Section**

The engine section shall incorporate the following facilities:

i. Control system components and equipment such as relays, contractors, timers etc. for automatic operation.
ii. Instruments, indicator lamps, fuses terminal blocks, push buttons, control and selector switches etc. as are required.
iii. Engine shut down and block out devices due to faults or abnormalities as specified.

iv. Visual/audio alarms and indications as specified.

v. Inter-connection and control wiring etc.

9.19.4 **Auxiliary Pump Section**

The auxiliary pump section for jockey pump shall incorporate the following:

a. TP&N MCBS.
b. Control system components such as relays, times, contractors, etc. as are necessary for functional requirements.
c. Starter unit, current transformer and ammeter.
d. Indication lamps, fuses, terminal blocks, push buttons selector, switch etc. as required.
e. Inter-connections and control wirings etc.

9.19.5 **Control Section**

This section shall incorporate the following:-

a. Control components integrating the various sections, so as to satisfy the functional requirements.

c. Visual/audio alarms, not covered in individual sections.

d. Lamps healthy test facility.

e. Instruments, indicating lamps, push buttons, fuse terminal blocks etc. as are required.

f. Test facility to simulate operation of hydrants.

9.19.6 **Other Control Components**

9.19.6.1 **Pressure Switches**

Pressure switches shall be provided for switching on and off the pressurization pump at preset pressures and also for switching off the fire pump at preset pressure. Being the main component for initiating the signal for the operation of the pumps, the pressure settings shall be totally reliable, sturdy in construction and of long life. The pressure settings shall be adjustable.

9.19.6.2 **Power Supply for Controls**

In order to ensure that the control systems remains co-operational at all times the control system shall be designed for 24 VDC operation fed from the battery. This shall be independent of the starting battery for the engine i.e. battery shall remain trickle charged at all times from the separate battery charger at the control section.

9.19.7 **Electrical Work and Earthing**

Scope

This section covers the detailed requirements of electrical works including earthing, for the materials installation.

Electric power supply shall be terminated in the incoming switch gear of the power and control panel by the Department. All further connections to the various components of the system shall be the responsibility of the contractor, for a complete and working system, satisfying all the functional requirements.

The scope shall particularly include the following :

Power and Control Panel(s) as given in relevant section.

All inter-connections with multi-core armoured copper cables of size suitable between various control units and control panel(s).

All power cable connections with multi-core armoured aluminium cables of size as specified in BOQ, between panels, motors etc.

Necessary earthing with 2 Nos. G.I. plate electrodes and loop earthing.

The work shall be carried out conforming to CPWD General Specifications for electrical works part-I (Internal) amended up to date and part-II (External) amended upto date.

9.19.8 **Operating Sequence for the Fire Fighting System**

1 The operating pressure in the mains is to be maintained at 3.5kg/cm^2.

2 The Terrace pump shall start automatically the moment pressure drops to 3.5 kg/cm^2 because any leakage or minor draw-off from the system and stop when the pressure reaches 3.5 kg/cm^2 again.

3 The control panel shall have status selection for the pumps for “automatic” as well as “manual” operation.

4 Pumps when under “manual” status shall be operated manually through relevant push buttons.

5 The fire pumps once started shall not be stopped automatically.

6 The fire pumps shall be locked out for operation both for “manual” and “automatic” operations, once the low water controls operates and furnish an audio and visual alarm on the panel the audio alarm can be silenced by accepting the alarm. The visual alarm shall be individual for each equipment. It shall be flashing type and on acceptance remain steady. A reset button shall be provided for each pump for returning the pump for fire duty.

7 Over load or under voltage/no volt trip devices for electric fire pump shall not be provided in the starter. LED type indication lamps to indicate the availability of power shall be provided.

8 Once tripped the electric fire pump shall remain locked out for operation irrespective of the position of its operational status selection switch. Look out indication shall be available on the panel.

9 Return to normal operational availability shall be feasible only by manual re-set of locked out units by operation of appropriate push buttons.

10 When fire pumps are brought into operation an audible tone from turbine type alarm operated by water flow in the mains shall be provided to indicate the healthiness of the

system. The healthy running alarm shall not be silenced till the fire pump is shut down, but the tone may be mellowed by the operation, if required.

11 Alarm for failure and lock out of any pump shall distinct from “healthy” alarm. Failure alarms shall be loud and can be silenced on acceptance.

12 Repeat indication of various audio and visual indications on a slave remote panel in fire control room in terminal building shall be available. The slave Remote panel shall have indication lamps to show the status of :

a) Power healthy in fire pump on terrace

b) Terrace pump ‘ON’

The slave Remote panel shall also have a hooter, which shall sound in case, any pump is ‘ON’. The slave Remote panel shall have a provision to reset the hooter with the help of a push button.

13. Testing

Initial Testing

i. During laying of pipes, the same shall be subjected to 3.5 kg./cm2 hydraulic pressure for a period of 24 hours, in sections.

ii. After completion of the work, all valves/fittings shall be installed in position and entire systems shall be tested for 24 hours at a pressure of 3.5 kg/ cm2. The drop of pressure up to 0.5 KG/cm2 shall be accepted.

Final Testing

i. After completion, all operation checks as per para 2.4.1.14 shall be carried out for automatic operation of the systems. For this purpose, landing valves may be opened at different locations. The exercise shall be repeated couple of times to ensure trouble free operation of the system.

ii. Flow Test :- The design flow of pumps shall be checked. The pump shall be operated after opening a number of landing valves at different locations. Design pressure is to be maintained in the Terrace . Water discharge is to be measured by drop in level in O.H. tank for a certain period. All pumps shall be tested one by one. The flow rate shall be not less than as specified while maintaining the design pressure in pump house.

iii. Inspection by Local Fire Officer

After completion of the work and testing to the entire satisfaction of Engineer-in-Charge, the installation shall be offered for inspection by Chief Fire Officer or his representative. Testing as desired by the Fire Officer shall be carried out. The contractor will extend all help including manpower during testing. The observation of Chief Fire Officer which are a part of agreement shall by attended by the contractor. Noting extra is to be paid for testing as above.

14. **Commissioning:**

i. Flushing the System :- Before commissioning, the entire system shall be flushed to ensure that any earth/foreign matters which might have entered during installation are taken out. For this, pump may be operated and valves opened at different locations.

ii. As soon as the work is complete, the system shall be commissioned and made available for use. Requirement of fire fighting installations is equally important during occupation of the building. If the building is to be occupied in part, fire fighting system of building

completed shall be commissioned by isolating the system of under construction portion of the building.

iii. The fire fighting system shall be maintained and manned from the very first day of its commissioning.

iv. Any defects noticed during the warranty period shall be promptly attended by the contractor and availability of the system at all time is to be ensured.

9.20 **Battery Charger**

Necessary float and boost charger shall be incorporated in the control section of the power and control panel to keep the battery under trickle condition. Ammeter to indicate the state of charge of the batteries shall be provided.

9.21 POWER AND CONTROL PANEL AND OTHER CONTROL COMPONENTS

9.21.1 Scope

This section covers the detailed requirements of the power and the control panel for the wet riser system, and also for the various control components in the system.

9.21.2 Power and Control Panel

i **Constructional Requirements:**

General Features The power and control panel shall be totally enclosed, free standing floor mounted cubicle type, fabricated out of sheet steel not less than 2mm thick. Where necessary, additional stiffning shall be provided by angle iron framework. General construction shall be of compartmentalization and sectionalisation such as mains incomers, electric fire pump, diesel fire pump, pressurization pump, and control, so that there is no mix up of power and control wiring and connections in the same sections as far as possible. The panel shall also have the space for cable allays. The space for cable alleys shall be at least 200mm wide to the entire depth of panel. The panel shall be front operated type with all connections accessible from the front. Front doors shall be hinged type. Back doors shall be hinged type or removable type for inspection. The door hinges shall be of concealed type. The doors for busbar chamber shall be of removable type with the help of bolts. The doors shall be provided with quick fixing doors knobs with indication. The general arrangement of the panel shall be got approved before fabrication the cubicle construction shall be to IP 21 as per IS:2147.

ii **Cable entries and gland plates**

All cable entries shall be through gland plates which are removable and sectionalized. Where heavy cables are brought in and terminated, suitable clamps shall be incorporated to relieve the stress on the glands due to the weight of the cable. Cable entries may be from top or bottom depending on the equipment layout and cable scheme as approved.

iii Busbar and Connections

The busbars shall be air insulated, and of aluminium of high conductivity electrolytic quality (grade E 91 E to IS: 5082) and of adequate cross section. Current density shall not exceed 1.3 amps. Per sq.cm. All connections to individual circuits from the busbars shall preferably be with solid connections. The busbars and the connections shall be suitable covered with PVC sleeves or in an approved manner. Busbars shall be suitably supported using non-hygroscopic insulated supports. High tensile bolts and spring washers shall be provided at busbar joints.

iv Earthing Arrangement

GI strip 25mm x 5mm shall be run at the rear of the board. 2 nos. earth terminals shall be provided at the ends of the GI strip for connection to earth system.

v Terminal Blocks and Small Wiring

Terminal blocks shall be of heavy duty type and generally not less than 15 amps 250V grade upto 100V, and 600V grade for the rest of the functions. They shall be easily accessible for maintenance. All control wiring inside the panel shall be with PVC insulated copper conductor of 2.5 sq.mm. size and 600V grade conforming to IS:694-1977. Suitable colour-coding may be

adopted. Wiring harness shall be neatly formed and run preferably function wise, and as far as possible segregated voltage wise. Identification ferrules shall be used at both ends of the wires.

vi Instruments and Lamps

All indication lamps and instruments shall be flush mounted type in front of the panel. The voltmeter and ammeter shall be of size 100mm nominal (dial size) conforming to clause 1.5 of IS 1248 for accuracy.

Current transformers shall be provided with ammeters.

Indicating lamps to indicate the availability of electric supply shall be provided at the incoming section. Necessary indicating lamps for alarm indications and battery charging shall be provided in the respective sections.

All indicating lamps and meter shall be protected with HRC cartridge type fuses.

vii Labels

All internal components shall be provided with suitable identification labels. Suitably engraved labels shall be fixed at the panel for all switches, instrument push buttons, indicating lamps etc.

viii Painting

The entire panel shall be given a primer coat of red lead after degreasing and phosphating treatment and 2 coat of final paint of approved shade before assembly of various items.

9.21.3 **Equipment Requirements**

The power and control panel shall comprises individual section for the various equipment's of the system and controls, in a combined cubicle type design. All switches, MCCBS, MCBS and fuse/fuse switch units shall be conforming to relevant IS.

9.22 **Standards and Codes**

1.	IS – 1648 – 1961	Code of Practice for fire safety of building (general) fire fighting equipment and maintenance.
2.	IS – 3844 – 1966	Code of practice for installation of internal fire hydrant in multi-stores building.
3.	IS – 2217 – 1963	Recommendation for providing first aid and fire fighting arrangement in public buildings.
4.	IS – 2190 – 971	Code of practice for selection, installation and maintenance of portable first fire appliance.
5.	IS – 3589	Electrically Welded Steel pipes
6.	IS – 1239	Mild steel tubes, Tubulers and other wrought steel fittings
7.	IS – 780	C.I. Double flanges sluice valve.
8.	IS – 778	Gun Metal Valves
9.	IS – 909 – 1965	External fire hydrant (underground)
10.	IS – 5290 – 1969	Internal Landing Valve
11.	IS – 884 – 1969	First and hose reel
12.	IS – 934 – 1976	Specification for portable chemical fire extinguisher soda acid type.
13.	IS – 2878 – 1969	Specification for fire extinguisher for carbon dioxide
14.	IS – 2189 & 2109	Automatic fire alarm system or BSS 3116.

15.	NBC	National Building Code.-2016 (Part-IV)
16.	CPWD Specifications	CPWD Specification - 2018

Items Technical Specification are specified for the entire fire fighting system. However if some items specifications are not mentioned same shall be dealt in conjuction with NBC-2016 & CPWD Specification-2018 whichever is superior.

9.23 LIST OF APPROVED MAKE OF MATERIAL

S.No.	Description	Make of Material
1.	MS Pipes	Jindal Hissar / Tata /surya
2.	Malleable M.S. fittings	jansons/V.K./DRP
3.	Butterfly Valve	Audco / Zoloto /sant
4.	CP GM Ball Valve	Zoloto / Audco / Sant
5.	Air Release Valve	Sukan /Leader/Sant
6.	Fire Hydrant Valve	Padmini / Minimax /Newage
7.	RRL Hose	Padmini / Minimax /Newage
8.	Branch Pipe	Padmini / Minimax/Newage
9.	GM Coupling	Padmini / Minimax / Newage
10.	Pumps	Mather Platt/ Kirloskar
11.	Fire Extinguishers	Padmini /Minimax /Ceasefire
12.	Rubber Tube for Hose reel	Newage / Padmini / Minimax
13.	Paint	J&N / Nerolak / Asian
14.	Welding rods	Victor / Maruti / Advani
15.	Fasteners(Galvanised)	Chilly/Canon / Fishers / Hilti
16.	Dash fastners/clamps	Cannon/Chilly / Fishers / Hilti
17	Hose Box/Hose reel drum	Minimax / Padmini/Newage
18	Anti vibration pads	Kanwal / Dunlop
19	Mechnical Seal	As per OEM Cert./ Duramat
20	GM Siemese Connection	Geetach / Minimax / Pandmini
21	Draw out Connection	Newage / Minimax / Padmini
22	Pressure switch	Indfoss
23	Pressure Gauge	H.Guru / Fiebig
24.	Cables/wire	Kalinga / National / Polycab
25.	PVC conduit	AKG/BEC /Polycab
26	Switch Gear	L&T / Siemens
37.	Non-Return Valve	Audco / Zoloto /Sant

Notes:

i. The Contractor shall supply ISI marked material as per any of the makes or brands indicated above. In case ISI marked material for any of the brands is not being manufactured by the firm(s), first quality material shall be accepted. The samples of the material shall in either case have to be got approved from the Architect/Engineer.

ii. Material where no make/brand has been mentioned, ISI marked samples shall be submitted by the Contractor for approval of Architect/Engineer. For those class of materials, where no firm exists with ISI approval, sample of first quality material of the firm shall be submitted for the approval of the Engineer.

iii. Any variation from the above mentioned makes/brands will require specific approval of Architect/Engineer.

APPENDIX SHOWING IMPORTANT SCHEDULES

1.	Signing Of Agreement	Within 7 days of issue of letter of intent / order (clause 1.8)
2.	Commencement Of Work	Immediately within seven days of issue of letter of intent / order (clause 5.3.1)
3.	Period Of Completion	24 Months from date of issue of letter of intent / order (clause 1.1)
4.	Liquidated Damages	0.5% of Contract value per week subject to a maximum of 5% of the contract value (clause 5.2.26)
5.	Period Of Value Of Running/ On Account Bill	Monthly if not less than Rs.30.00 Lakhs (Clause 5.5.2 (i-v))
6.	Security Deposit	10% of the contract value. Recoveries will be made @ 10% from each Running Account / On Account Bill (Clause 5.2.18)
7.	Refund Of Security Deposit	1st installment equal to 50% of the security deposit after 180 days of the virtual completion of the entire work. (clause 5.2.19(i)) 2nd installment equal to 50% viz., balance of the security deposit after thirty days of expiry of defects liability period. (clause 5.2.19 (ii))
8.	Secured Advance	75% of the material brought to site for the express consumption in this project.
9.	Income Tax And Work Tax & Sales Tax Deduction	At prevailing rate from each bill.
10.	Defects Liability Period	24 Months after completion of work (clause 5.5.5)
11.	Period Of Final Measurement	Three months after virtual completion of work. (clause 5.5.3)
12.	Rate for Extra, Additional or Altered or Substituted work	If the rates for altered, additional or substituted work cannot be determined in the manner specified in sub-clause 5.4.2 (i) and (ii), the rates for such items will be worked out on the basis of rates given in BSR 2013 Ajmer. The rates for additional, altered and substituted work shall be paid as per BSR 2021 Ajmer Circle @ ……. % above/below.

MAYOOR SCHOOL

Primary Block Extension

TENDER FOR

CIVIL, ELECTRICAL and FIRE FIGHTING WORKS

VOLUME – II: BILL OF QUANTITIES

CLIENT

MAYOOR SCHOOL, AJMER

ARCHITECTS

MR. VIJAY MATANGE

VINYAS
Delhi
Email: vinyas.arch@gmail.com

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
	SCHEDULE OF QUANTITIES FOR CIVIL WORKS :				
1	**EARTH WORK**				
	Note : The item rate quoted shall be applicable to net quantities after deduction of prescribed % for voids mentioned in the specifications under sub head "Carriage of materials".				
1.1	Earth work in excavation in the following types of soil in foundation trenches, rafts or drains in xl sections and widths including cleaning jungle, uprooting of vegetation, grass, brush wood, trees and saplings etc. complete including dressing of sides and ramming of bottoms, lift up to 1.5 m including taking out the excavated soil and disposal of surplus excavated soil as directed within a lead of 50m.				
1.1.1	All kinds of soil.	**7.646**	**Cu.M.**		
1.2	Filling available excavated earth, in trenches, plinth, sides of foundation etc., in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering for all leads and lift up to 1.5 m.	**r.o.**	**Cu.M.**		
1.3	Supplying and filling imported good earth within plinth and over areas within the site in layers not exceeding 20 cm in depth, consolidating each deposited layer by watering and ramming, including all leads and lifts.	**r.o.**	**Cu.M.**		
1.4	Supplying and filling in plinth with Fine sand under floors including watering, ramming, consolidating and dressing complete.	**r.o.**	**Cu.M.**		
1.6	Extra for every additional lift of 1.5m for a lead of 50m. or part thereof in all types of soil.	**r.o.**	**Cu.M.**		
1.8	Disposal of surplus earth outside Employer's site including all lifts and leads.	**r.o.**	**Cu.M.**		
1.9	Carriage of soil upto 500 mtr	**7.646**	**Cu.M.**		
1.10	Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15 cm deep and disposal of rubbish, lead upto 50 m and lift upto 1.5 m.				
1.10.1	All kinds of soil.	**r.o.**	**Sq.M.**		
1.11	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :				
1.11.1.1	Pipes, cables etc, not exceeding 80 mm dia.	**2.832**	**Cu.M.**		
1.11.1.2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	**2.832**	**Cu.M.**		
1.11.1.3	Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm.	**2.832**	**Cu.M.**		
1	**TOTAL OF EARTH WORK CARRIED OVER TO SUMMARY**				
2	**CONCRETE WORK**				
	Note: The Item Rates quoted shall be for all floors, heights, shapes and places.				
2.2	Providing and laying cement concrete of mix 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size). in footings and bases for columns etc., including ramming, finishing etc. and also centring, shuttering, strutting, propping, removal of formwork, etc. wherever required.				
2.2.1	In footings and Plinths	**0.510**	**Cu.M.**		
2.2.2	Under floors	**121.852**	**Cu.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
2.3	Providing and laying cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size), in coping, bed blocks, above RCC beams in walls, around vertical drainage pipes and window sills etc., including cost of centring, shuttering, strutting, propping, removal of form work,, vibrating and mixing etc.	**70.792**	**Cu.M.**		
2.9	Providing and fixing up to floor five level precast cement concrete string or lacing courses, copings, cornices, bands, bed plates, anchor blocks, window sills, shelves, louvers, steps, staircases etc. including hoisting and setting in position with cement mortar 1:3 (1 cement : 3 coarse sand), cost of shuttering and finishing smooth with cement plaster 1:3 (1cement:3 fine sand) admixed with pigment as directed where required.				
2.9.1	In cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size), including admixing approved pigment in required proportion.	**16.278**	**Cu.M.**		
2.9	Providing and filling cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size), in pressed steel door and window frames of various profiles.	**4.846**	**Cu.M.**		
2.10	Providing and laying 'pot' (matka) filling and laying cement concrete of mix 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 12.5 mm nominal size) over the inverted pots in sunken areas.	**24.211**	**Cu.M.**		
2.11	Providing and laying graded stone soling in Foundations and Plinths including ramming and consolidation.	**r.o.**	**Cu.M.**		
2.12	Providing and laying graded stone soling in Foundations and Plinths including ramming and consolidation using stone rubble provided by owner.	**r.o.**	**Cu.M.**		
2	**TOTAL OF CONCRETE WORK CARRIED OVER TO SUMMARY**				
3	**REINFORCED CEMENT CONCRETE**				
	Note: The Item rates quoted shall be for all floors, heights, shapes and places.				
3.1	Reinforced cement concrete work in works under plinth such as slabs and beams of rafts, footings, bases of columns, lift pit, under ground water tanks etc. excluding cost of centring, shuttering, strutting, propping, removal of formwork, mixing, vibrating etc. but excluding cost of reinforcement				
3.1.1	with 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size).	**r.o.**	**Cu.M.**		
3.1.2	with 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size).	**r.o.**	**Cu.M.**		
3.1.3	with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	**r.o.**	**Cu.M.**		
3.2	Reinforced cement concrete work in walls (any thickness), incl. attached pillasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts, struts, etc. excluding cost of centring, shuttering, strutting, propping, removal of formwork, mixing, vibrating etc. but excluding cost of reinforcement				
3.2.1	with 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size).	**50.080**	**Cu.M.**		
3.2.2	with 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size).	**7.815**	**Cu.M.**		
3.2.3	with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	**r.o.**	**Cu.M.**		
3.3	Reinforced cement concrete work in beams, suspended floors, roofs, landings and balconies, shelves, chajjas, lintels, bands, plain window sills, staircases incl. folded plate and spiral staircases etc., excluding cost of centring, shuttering, strutting, propping, removal of formwork, mixing, vibrating etc. but excluding cost of reinforcement				
3.3.1	with 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size).	**350.068**	**Cu.M.**		
3.3.2	with 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size).	**351.534**	**Cu.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
3.3.3	with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	**205.360**	**Cu.M.**		
3.4	Centring, shuttering, incl. strutting, propping etc., and removal of formwork for:				
3.4.1	Foundations, Footings, bases of columns etc. for mass concrete	**r.o.**	**Sq.M.**		
3.4.2	Walls (any Thickness) incl. Attached pilasters, buttresses, plinth and string courses etc.	**50.168**	**Sq.M.**		
3.4.3	Suspended floors, roofs, landings and balconies incl. Edge of slabs	**1695.724**	**Sq.M.**		
3.4.5	Beams, lintels, plinth beams, girders, bressumers and cantilevers	**2068.448**	**Sq.M.**		
3.4.6	Columns, pillars, piers, Abutments, Posts, Struts etc.	**476.593**	**Sq.M.**		
3.4.7	Stairs, excl. landings except spiral staircases	**132.322**	**Sq.M.**		
3.4.9	Arches Domes, vaults up to 6m. Span	**r.o.**	**Sq.M.**		
3.4.10	Extra for Arches Domes, vaults exceeding 6m. Span	**r.o.**	**Sq.M.**		
3.4.13	Small lintels not exceeding 1.5m. Span moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like	**r.o.**	**Sq.M.**		
3.4.14	Weather shades, Chajjas, Corbels etc. incl. Edges	**63.650**	**Sq.M.**		
3.4.15	Edges of slabs and breaks in floors and walls Under 20 cm wide	**139.217**	**R.M.**		
3.4.17	Cornices and mouldings	**36.232**	**Sq.M.**		
3.5	Extra for additional height in centring and shuttering wherever reqd. with adequate bracing, propping etc. including cost of deshuttering and decentring at all levels over a height of 3.5m., for every additional 1m. or part thereof (plan area to be measured)	**r.o.**	**Sq.M.**		
3.6	Reinforcement for RCC work including cutting, straightening, bending, binding and placing in position complete (including cost of binding wire):				
3.6.1	Thermo mechanically treated steel bar from Primary Steel manufacturers such as TATA / SAIL etc.	**22140**	**KG**		
3.6.2	Thermo mechanically treated steel bar from Secondary Steel manufacturers such as Kamdhenu etc.	**88560**	**KG**		
3.8	Providing, hoisting and fixing pre-cast reinforced cement concrete lintels not exceeding 1.5m clear span over doors, windows, ventilators, shafts and the like, including cost of centring, shuttering, strutting, propping, removal of formwork, mixing, vibrating etc. but excluding cost of reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size).				
3.8.1	Lintels not exceeding 1.5m clear span over doors, windows, ventilators, shafts and the like.	**r.o.**	**Cu.M.**		
3.10	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including conveying of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately).	**r.o.**			
3.10.1	All Works up to Plinth Level	**r.o.**	**Cu.M.**		
3.10.2	All works above Plinth Level and up to floor V level	**r.o.**	**Cu.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
3.10	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using fly ash and cement content as per approved design mix, and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer , manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying, excluding the cost of centering, shuttering, finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate / retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in – charge. Excess/ less cement used as per design mix is payable/ recoverable separately. NOTES- (1) OPC Cement content considered in this item is @ 330 kg/cum. (2) Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS : 456. Uniform blending with cement to be ensured in accordance with clauses 5.2 and 5.2.1 of IS:456 -2000 in the items of BMC and RMC. (3) The above item shall be used judiciously where specified quality of Fly Ash is available for mixing in concrete. Also, the guidelines issued by CDO, CPWD, vide circular no. CDO/SE(RR)/Fly Ash (Main)/102 dated 9th April 2009 shall be followed in such cases.				
3.10.1	All Works up to Plinth Level	**r.o.**	**Cu.M.**		
3.10.2	All works above Plinth Level and up to floor V level	**r.o.**	**Cu.M.**		
3.11	Add for using extra and deduct for using less cement in the items of BMC, RMC over or below the specified cement content therein	**r.o.**	**Quintal**		
3	**TOTAL OF REINFORCED CEMENT CONCRETE CARRIED OVER TO SUMMARY**				
4	**MASONRY WORK**				
	Note: The Item rates quoted shall be for all floors, heights, shapes and places				
4.1	Brick work with bricks of class designation 75 in foundation and plinth with cement mortar				
4.1.1	1:6 (1 cement :6 coarse sand).	**r.o.**	**Cu.M.**		
4.2	Brick work with bricks of class designation 75 in superstructure above plinth in cement mortar				
4.2.1	1:6 (1 cement :4 coarse sand).	**2.124**	**Cu.M.**		
4.3	Half Brick work with bricks of class designation 75 in cement mortar 1:4 (1 cement :4 coarse sand).				
4.3.2	In superstructure	**64.103**	**Sq.M.**		
4.4	Extra for providing 2 Nos. MS Bars 6 mm dia at every third course in Half Brick Work with FPS bricks.	**64.103**	**Sq.M.**		
4.14	Random rubble masonry with hard stone in foundation and plinth with cement mortar, including levelling up with cement concrete 1:6:12 (1 cement,: 6 coarse sand : 12 graded stone aggregate 20mm nominal size) at plinth level				
4.14.1	1:6 (1 cement :6 coarse sand).	**r.o.**	**Cu.M.**		
4.14.2	using stone rubble provided by owner in 1:6 Cement Mortar (1 cement :6 coarse sand)	**r.o.**	**Cu.M.**		
4.14.3	Extra for CR Facing				
4.14.3.1	Extra for CR Facing First Sort	**r.o.**	**Sq.M.**		
4.14.3.2	Extra for CR Facing Second Sort	**r.o.**	**Sq.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
4.15	Random rubble masonry with hard stone in Super Structure with cement mortar up to Floor Five, including levelling up with cement concrete 1:6:12 (1 cement,: 6 coarse sand : 12 graded stone aggregate 20mm nominal size) at plinth level				
4.15.1	1:6 (1 cement :6 coarse sand).	**798.729**	**Cu.M.**		
4.15.2	using stone rubble provided by owner in 1:6 Cement Mortar (1 cement :6 coarse sand)	**r.o.**	**Cu.M.**		
4.15.3	Extra for CR Facing				
4.15.3.1	Extra for CR Facing First Sort	**1188.569**	**Sq.M.**		
4.15.3.2	Extra for CR Facing Second Sort	**859.650**	**Sq.M.**		
4.19	Extra for Stone masonry with hard stone in				
4.19.1	Square or rectangular pillars	**r.o.**	**Sq.M.**		
4.19.2	Circular pillars	**r.o.**	**Sq.M.**		
4.20	Stone work in superstructure with cement mortar (1 cement : 6 coarse sand) including pointing with cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade above plinth up to floor five level.				
4.20.1	Chisel Dressed stone Chhajja in 37mm thk. Rough Mandana stone	**r.o.**	**Sq.M.**		
4.20.2	Stone pillars as per approved design	**r.o.**	**Sq.M.**		
4.20.3	Chisel Dressed sandstone arch as/ approved design	**r.o.**	**Sq.M.**		
4	**TOTAL OF MASONRY WORK CARRIED OVER TO SUMMARY**				
5	**WOOD & PVC WORK**				
	Note: The Item rates quoted shall be for all floors, heights, shapes and places.				
5.2	Providing and fixing following types FLUSH DOOR SHUTTERS, including providing and fixing seasoned hard wood integral lipping of 25 mm thick around the shutter and also including fixing of all hardware in each shutter (overall area of door shutter to be measured).	**r.o.**	**Sq.M.**		
5.2.4	Providing and fixing 32/33 mm thick flush door shutters (solid core type) from approved manufacturer conforming to IS:2202-Part I, having core of block board construction and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneer on both faces of shutter flat pressed with BWP type phenol formaldehyde synthetic resins finished with 1.0 mm laminate of approved shade and brand on both sides.	**69.259**	**Sq.M.**		
5.3	Making and fixing **38 mm thick, Ply panelled side hung door shutters made of First class C.P. Teak wood**, with a coat of anti termite arsenic chromate solution,, having stile(s) and top rail of 125 mm wide, middle rail of 150 mm wide and bottom rail of 200 mm wide and two additional vertical and horizontal rails of 25mm width in each shutter on both panels as per drawing, with 12mm thick both side veneered BWP ply panels, with First class C.P. Teak wood beading all around of size 12 x 15 mm. The contact surfaces at tenon and mortise joint shall be glued, also including fixing of all hardware in each shutter (overall area of door shutter to be measured).	**r.o.**	**Sq.M.**		
5.4	Making and fixing **38 mm thick, wire mesh side hung door shutters made of First class C.P. Teak wood**, with a coat of anti termite arsenic chromate solution,, having stile(s) and top rail of 125 mm wide, middle rail of 150 mm wide and bottom rail of 200 mm wide and two additional vertical and horizontal rails of 25mm width in each shutter on both panels as per drawing, using stainless steel fly wire mesh of approved gauge and size, with First class C.P. Teak wood beading all around of size 12 x 15 mm. The contact surfaces at tenon and mortise joint shall be glued, also including fixing of all hardware in each shutter (overall area of door shutter to be measured).	**r.o.**	**Sq.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
5.10	Providing and fixing Block board Shutters over 50mm x 35mm First class Kailwood or Pinewood wood frame,				
5.10.1	Providing and fixing Shutters over 50mm x 35mm First class Kailwood/ Pinewood frame, fixing frame to wall with rawl plugs, shutters of 19mm phenol formaldehyde bonded commercial board cladded with 1.5mm thick laminate of approved shade and manufacture, fixed to frame with full height bright finished brass hinges and screws, 6mm thick teak wood lipping on all edges, 40mm x 12mm tapered Teak wood beading all round, with necessary hard ware, i.e., medium size magnetic catchers in all shutters, 75mm bright finished brass handles, etc, including painting all inner surfaces with white synthetic enamel paint over a coat of ready mixed pink primer and french spirit polish on teak wood lipping and beading, including wood filler, sand papering etc. complete, unexposed surfaces of ply/board/wood in contact with RCC/Brickwork to be painted with chlorpyriphos concentrate. (only front elevation face area to be measured)	**61.316**	**Sq.M.**		
5.14	Providing and fixing **float glass panes** of approved make in fixed position of glass panes in rebates provided in frames of doors/windows complete with First class Ghana Teak wood beading of approved size and design, provided on outer side with necessary ordinary galvanised steel screws etc. complete (beading shall be paid extra.				
5.14.3	5 mm thick (13 kg/sqm)	**13.935**	**Sq.M.**		
5.14.4	6 mm thick (15 kg/sqm)	**40.357**	**Sq.M.**		
5.17	Providing and fixing bright finished Brass sliding door bolt (aldrop) as per I.S. Specifications and of approved make with ordinary stainless steel screws etc. Complete:				
5.17.1	250 x 16 mm.	**30**	**EACH**		
5.19	Providing and fixing bright finished Brass tower bolts as per I.S. Specifications and of approved make with ordinary stainless steel screws etc. complete :				
5.19.1	250 x 10 mm	**60**	**EACH**		
5.19.2	200 x 10 mm	**30**	**EACH**		
5.20	Providing and fixing bright finished brass handles as per I.S. Specifications and of approved make fixed with stainless steel screws etc. complete :				
5.20.1	125 mm	**120**	**EACH**		
5.24	Providing and fixing 40 mm dia approved rubber buffer of required length with ordinary galvanised screws etc. complete.	**60**	**EACH**		
5.25	Providing and fixing bright finished Brass hanging double legged floor door stopper with red rubber cushion of approved make with ordinary stainless steel screws etc. complete.	**60**	**EACH**		
5.32	Making and fixing box type cabinets with drawers, sides, top, bottom, divider and shelves of 19mm phenol formaldehyde bonded commercial board with 6mm commercial ply backing, fixing frame to wall with rawl plugs, front shutters of 19mm commercial grade phenol formaldehyde bonded clad with 1mm thick laminate of approved make and shade board fixed to frame with brass hinges and screws, 6mm thick teak wood lipping on all edges, 40mm x 12mm tapered First class Ghana or equivalent Teak wood beading all round, with necessary hard ware, i.e., medium size magnetic catchers on top and bottom in all shutters, 150mm tower bolt at top and bottom in the shutters, 100mm brass handles on each shutter, recessed locking arrangement with godrej lock etc. in all shutters and drawers, including either painting all inner surfaces with white synthetic enamel paint over a coat of ready mixed pink primer or pasting 0.8mm laminate and French spirit polish on exposed surfaces and teak wood lipping and beading, including wood filler, sand papering etc. complete, unexposed surfaces of ply/board/wood in contact with RCC/brickwork to be painted with chlorpyriphos concentrate. (only front elevation face area to be measured)	**20.439**	**Sq.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
5.33	Providing and fixing rest-room cubicle doors 600 to 750mm wide and 1800 to 2000 mm high (including max. 150mm floor clearance) made of 12 mm thick compact grade solid phenolic board Manufactured as per IS-2046, using hardware, fixing and its accessories made of Polyamide Thermoplastics Material & Non-Corrosive Metal. Doors are to be supported by a 31.10 mm diameter D shape aluminium vertical pole. The aluminium vertical pole shall be incorporated with an acoustic rubber strip to reduce noise effect. (Merino-Besco PD Door Series or equivalent).	22.761	Sq.M.		
5.40	Providing and fixing following types of double glazed units at all locations and places. The IGUs shall be assembled in the factory/ workshop of the glass processor. (Payment for fixing of IGU Panels in the curtain glazing is included in cost of respective items) For payment, only the actual area of glass on face # 1 of the glass panels (excluding the areas of the grooves and weather silicone sealant) provided and fixed in position, shall be measured in sqm.				
5.40.1	Providing, assembling and supplying vision glass panels (IGUs) comprising of hermetically-sealed 6-12-6 mm insulated glass (double glazed) vision panel units of size and shape as required and specified as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer-in-Charge.				
5.40.1.2	Providing and fixing double glazed hermetically sealed glazing in aluminium/ uPVC windows, ventilators and partition etc. with 6 mm thick clear toughened float glass both side, having 12 mm air gap, including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.	r.o.	Sq.M.		
5.40.2	Providing, assembling and supplying vision glass panels (IGUs) comprising of hermetically-sealed 5-10-5 mm insulated glass (double glazed) vision panel units of size and shape as required and specified as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer-in-Charge.				
5.40.2.1	Coloured tinted float glass 5mm thick substrate with reflective soft coating on face # 2, + 10mm Air gap + 5mm Heat Strengthened clear Glass of approved make having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20%, shading coefficient (0.25- 0.28) and U value of 3.0 to 3.3 W/m2 degree K etc. The properties of performance glass shall be decided by the technical sanctioning authority as per the site requirement.	60.536	Sq.M.		
5.40.2.2	Providing and fixing double glazed hermetically sealed glazing in aluminium/ uPVC windows, ventilators and partition etc. with 5 mm thick clear toughened float glass on both sides, having 10 mm air gap, including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.	r.o.	Sq.M.		
5.41	Providing and fixing Stainless Steel Fly Mesh to Door and Window shutters of approved gauge and size	r.o.	Sq.M.		
5.42	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc. to be paid separately).	r.o.	Sq.M.		
5.45	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.				
5.45.1	Upto 5mm depth and 5 mm width	r.o.	R.M.		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
5.45.2	Upto 10 mm depth and 10 mm width	**r.o.**	**R.M.**		
5.45.3	Upto 20 mm depth and 20 mm width	**r.o.**	**R.M.**		
	TOTAL OF WOOD WORK CARRIED OVER TO SUMMARY				
6	**STEEL and ALUMINIUM WORK :**				
	Note: The Item rates quoted shall be for all floors, heights, shapes and places				
6.3	Providing, fabricating and fixing MS grills/monkey ladder made out of standard MS sections in required pattern including cutting, drilling, welding and applying a coat of red oxide zinc chromate primer of approved make.				
6.3.1	in fixed glazing, window openings, ventilators and fixing to frame with steel screw and/or necessary welding etc. as required.	**1086.000**	**KG**		
6.3.2	For Staircase Railings and over compound walls etc. Including fixing in wall with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) plain cement concrete blocks of size 230mm x 230mm x 300mm) at 2.4 metre c/c or with dash fasteners as required (only weight of steel shall be measured).	**831.600**	**KG**		
6.13	Providing and fixing glazing in aluminium/ steel door, windows, ventilator shutters and partitions etc. with EPDM / 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 items.)				
6.13.3	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6 mm thick clear float glass both side having 12 mm air gap including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.	**r.o.**	**Sq.M.**		
6.14	Providing and fixing Pressed steel door frames manufactured from commercial mild steel sheet of specified thickness including hinges' jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25mm or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with split end tails to each jamb including sheet steel butt hinges of 2.5mm thick with mortar guards, lock strike plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by the Architect.				
6.14.1	Using mild steel sheet of 1.6mm (14 SWG) thickness	**3605.479**	**KG**		
6.18	Providing and fixing in tubular steel shutters in steel window frames as per detailed design manufactured from commercial mild steel tubular sections of specified thickness including hinges, handles, stays, welded or rigidly fixed together by mechanical mean and applying a coat of approved steel primer after pre-treatment of the surface as directed by the Architect.	**868.800**	**KG**		
6.19	Fixing in position Pressed steel window frames and tubular steel shutters with mild steel grills embedded in cement concrete blocks in C.C. 1:2:4 (1 cement : 2 coarse and : 4 stone grit 10 mm nominal size) of size 150 x 100 x 100 mm or with 25 x 3.5 mm lugs of suitable length & shape as required at site fixed with metallic rawl plugs and bolts or with fixing clips or with bolts and nuts with necessary arrangements as required.	**99**	**EACH**		
6.24	P/F pre fabricated louvers for MS windows including 3mm thick 100 mm wide frosted glass strips with necessary screws and hardware	**2.973**	**Sq.M.**		
6	**SUBTOTAL STEEL and ALUMINIUM WORK :**				

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
7	**FLOORING, TILE and STONE WORK**				
	Note: The Item rates quoted shall be for all floors, heights, shapes and places				
7.1	Cement concrete flooring 1:2:4 (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size), finished with a floating coat of neat cement slurry including rounding of edges and strips etc. but excluding the cost of nosing of steps etc. complete, including providing and fixing glass strips of required width and 4 mm thick..				
7.1.1	50 mm thick	**12.263**	**Sq.M.**		
7.4	Precast terrazzo tiles 20mm thick with marble chips of 6mm (average size), laid in skirting and risers of steps, jointed with neat white cement slurry mixed with pigment to match the shade of tiles, including rubbing polishing complete on 12mm thick cement plaster 1:3 (1 cement: 3 coarse sand)				
7.4.1	Tiles of white shade using white cement	**r.o.**	**Sq.M.**		
7.4	Precast chequered terrazzo tiles 22mm thick with marble chips of 6mm (average size), laid in skirting and risers of steps, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing polishing complete on bed of 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand)				
7.4.1	Tiles of white shade using white cement	**74.322**	**Sq.M.**		
7.5	Providing and fixing first Quality Ceramic glazed tiles of approved shade and colour with minimum thickness 6 mm in dado of approved size on a bed of 12mm thick cement plaster 1:3 (1 cement : 3 coarse sand) for all types of surfaces (skirting, dado, risers, treads etc.) and jointed with white cement slurry pigmented to matching shade of tile including chasing of walls wherever required.				
7.5.1	Rate for fixing tiles when tiles are provided by the owner or supplied separately	**316.242**	**Sq.M.**		
7.5.2	Supply of Tiles of base rate Rs.450 per Sq.M.	**189.745**	**Sq.M.**		
7.5.3	Supply of Tiles of base rate Rs.750 per Sq.M.	**126.497**	**Sq.M.**		
7.6	Providing and fixing first Quality Ceramic glazed floor tiles of approved shade and colour with minimum thickness 6 mm of approved size on a bed of 20mm thick cement plaster 1:4 (1 cement : 4 coarse sand) for all types of surfaces (skirting, dado, risers, treads etc.) and jointed with white cement slurry pigmented to matching shade of tile including chasing of walls wherever required.				
7.6.1	Rate for fixing tiles when tiles are provided by the owner or supplied separately	**79.432**	**Sq.M.**		
7.6.2	Supply of Tiles of base rate Rs.450 per Sq.M.	**79.432**	**Sq.M.**		
7.7	20 mm thick MACHINE MIRROR POLISHED STONE (First quality) Flooring, Skirting, Counter Tops, Fascias, Treads and Risers with mirror polished edge moulding as per design (edge moulding polish paid extra), over 20 mm average thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry mixed with suitable pigment to match the colour of stone, including increasing the edge thickness of slabs by pasting stone strips using suitable epoxy glue and protecting the surface with application of plaster of paris, stone slab in sizes not less than 900mm long and 600mm wide in required design.				
7.7.1	Fixing **marble or other stone**, **provided by the owner or supplied separately incl. Mirror polish.**	**r.o.**	**Sq.M.**		
7.7.2	Fixing **granite** or other pre-polished stone **provided by owner or supplied separately including machine mirror polish.**	**13.935**	**Sq.M.**		
7.7.3	Supplying Granite of Base Rate of Rs.750.00 per Sq.m.	**r.o.**	**Sq.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
7.7.4	Supplying Granite of Base Rate of Rs.1000.00 per Sq.m.	**r.o.**	**Sq.M.**		
7.7.5	Supplying Granite of Base Rate of Rs.1250.00 per Sq.m.	**8.361**	**Sq.M.**		
7.7.6	Supplying Granite of Base Rate of Rs.1500.00 per Sq.m.	**5.574**	**Sq.M.**		
7.7.7	Supplying and Fixing Granite of Base Rate of Rs.1750.00 per Sq.m.	**r.o.**	**Sq.M.**		
7.8	20 mm thick MACHINE POLISHED STONE (First quality) FLOORING, over 20 mm average thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry mixed with suitable pigment to match the colour of stone, including protecting the surface with application of plaster of paris, stone slab in sizes not less than 900mm long and 600mm wide in required design.				
7.8.1	Supplying and Fixing Marble or similar stone of Base Rate of Rs.500.00 per Sq.m.	**r.o.**	**Sq.M.**		
7.8.2	Supplying and Fixing Marble or similar stone of Base Rate of Rs.600.00 per Sq.m.	**r.o.**	**Sq.M.**		
7.8.3	Supplying and Fixing Marble or similar stone of Base Rate of Rs.700.00 per Sq.m.	**418.357**	**Sq.M.**		
7.8.4	Supplying and Fixing Marble or similar stone of Base Rate of Rs.800.00 per Sq.m.	**r.o.**	**Sq.M.**		
7.8.5	Providing & fixing 25mm thk first quality MANDANA stone flooring	**r.o.**	**Sq.M.**		
7.8.6	Providing & Fixing 25 mm thick first quality KOTA or NIMBAHEDA stone flooring	**1255.071**	**Sq.M.**		
7.8.7	Fixing 25 mm thick KOTA or MANDANA stone flooring (stone provided by owner)	**r.o.**	**Sq.M.**		
7.8.8	Fixing Granite or other pre-polished stone provided by owner	**r.o.**	**Sq.M.**		
7.8.9	Fixing marble or other stone requiring machine polish, provided by the owner or supplied separately	**r.o.**	**Sq.M.**		
7.9	20 mm thick MACHINE POLISHED STONE (first quality) SKIRTING laid over 12 mm average thick base of cement mortar 1:3 (1 cement: 3 coarse sand), laid and jointed with grey cement slurry, mixed with pigment to match the shade of marble slab, including rubbing and polishing complete, including necessary chiselling of brickwork wherever required, (skirting to project 5 mm uniform from finished plastered surface.				
7.9.1	Supplying & Fixing 25 mm thick MANDANA stone SKIRTING	**r.o.**	**Sq.M.**		
7.9.2	Supplying & Fixing 25 mm thick KOTAH or NIMBAHEDA stone SKIRTING	**r.o.**	**Sq.M.**		
7.9.3	Supplying and Fixing Marble or similar stone SKIRTING of Base Rate of Rs.500.00 per Sq.m.	**62.406**	**Sq.M.**		
7.9.4	Supplying and Fixing Marble or similar stone SKIRTING of Base Rate of Rs.700.00 per Sq.m.	**41.604**	**Sq.M.**		
7.9.5	Using g**ranite** or other pre-polished stone **provided by owner**	**r.o.**	**Sq.M.**		
7.9.6	Fixing marble or other stone requiring machine polish, provided by the owner or supplied separately	**r.o.**	**Sq.M.**		
7.10	Providing and fixing sloping chajja of stone 40 mm thick and upto 80 cm wide beyond the wall as measured along the slope in cement mortar 1:4 (1 cement : 4 coarse sand) with 12 mm diameter anchoring steel bar, 45 cm long, fixed in each stone and supported on and including with bricks cove in cement mortar 1:4 (1 cement : 4 coarse sand), including pointing in cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade				
7.10.1	Using 40 mm thk. Chisel dressed Mandana sand stone	**r.o.**	**Sq.M.**		
7.11	Sand stone cladding over wall surfaces over 12mm cement plaster 1:3 (1 Cement : 3 coarse sand), jointed with white cement slurry, mixed with pigment to match the shade of the stone fixed to base wall with the help of Stainless steel clamps of approved quality and make and no.s.				
7.11.1	Using 25 mm thk. Rough Mandana sand stone of size 570mm x 570mm or more.	**r.o.**	**Sq.M.**		
7.11.2	Using 25 mm thk. Polished Mandana sand stone of size 570mm x 570mm or more.	**117.383**	**Sq.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
7.11.3	Using 37 mm thk. Rough Red Agra sand stone of size 570mm x 570mm or more.	r.o.	Sq.M.		
7.11.4	Using 37 mm thk. Polished Red Agra sand stone of size 570mm x 570mm or more.	r.o.	Sq.M.		
7.11.5	Using 37 mm thk. Rough Dholpur Pink sand stone of size 570mm x 570mm or more.	r.o.	Sq.M.		
7.11.6	Using 37 mm thk. Polished Dholpur Pink sand stone of size 570mm x 570mm or more.	r.o.	Sq.M.		
7.11.7	Using 40 mm thk. Rough Mandana sand stone of size 570mm x 570mm or more.	r.o.	Sq.M.		
7.11.8	Using 40 mm thk. Polished Mandana sand stone of size 570mm x 570mm or more.	r.o.	Sq.M.		
7.11.9	Using 50 mm thk. Rough Mandana sand stone of size 570mm x 570mm or more.	r.o.	Sq.M.		
7.11.10	Using **50 mm thk. Polished Mandana** sand stone of size 570mm x 570mm or more.	40.136	Sq.M.		
7.11.11	Using polished/rough sand stone provided by owner	r.o.	Sq.M.		
7.12	Providing and fixing Stainless steel clamps for stone cladding on vertical surfaces	r.o.	EACH		
7.13	Proving and laying Sand Stone Coping & Sills over wall surfaces of reqd. size over 12mm cement mortar 1:3 (1 Cement : 3 coarse sand), jointed with white cement slurry, mixed with pigment to match the shade of the stone fixed to tops of walls.				
7.13.1	Using **25 mm thk. Rough Mandana** sand stone	r.o.	Sq.M.		
7.13.2	Using **25 mm thk. Polished Mandana** sand stone.	r.o.	Sq.M.		
7.13.3	Using **37 mm thk. Rough Red Agra** sand stone.	r.o.	Sq.M.		
7.13.4	Using **37 mm thk. Polished Red Agra** sand stone.	r.o.	Sq.M.		
7.13.5	Using **37 mm thk. Rough Dholpur Pink sand** stone.	r.o.	Sq.M.		
7.13.6	Using **37 mm thk. Polished Dholpur** Pink sand stone.	r.o.	Sq.M.		
7.13.7	Using 40 **mm thk. Rough Mandana** sand stone.	r.o.	Sq.M.		
7.13.8	Using 40 **mm thk. Polished Mandana** sand stone.	r.o.	Sq.M.		
7.13.10	Using **50mm thk. Chisel Dressed Rough Mandana** sandstone.	120.407	Sq.M.		
7.13.11	Using **50 mm thk. Polished Mandana** sandstone.	43.479	Sq.M.		
7.13.12	Using polished/rough sand stone **provided by owner**	r.o.	Sq.M.		
7.14	Providing mirror polished NOSING to edge of stones by machine grinding etc. Complete				
7.14.1	Full round or as/ approved sample nosing in marble and like stones in single thickness (18-20mm)	r.o.	R.M.		
7.14.2	Full round or as/ approved sample nosing in marble and like stones in double thickness (36-40mm)	91.440	R.M.		
7.14.3	Full round or as/ approved sample nosing in granites in single thickness (18-20mm)	30.480	R.M.		
7.14.4	Full round or as/ approved sample nosing in granites in double thickness (36-40mm)	30.480	R.M.		
7.14.6	Full round or as/ approved sample nosing in Sandstone (40-50mm)	r.o.	R.M.		
7.15	Extra for Laying BORDERS, PATTERNS ETC. IN FLOORING (LABOUR ONLY)				
7.15.1	Borders up to 3" wide strips of stone	508.025	R.M.		
7.15.2	Diamonds up to 75x75 mm in size	r.o.	EACH		
7.17	Providing and fixing Kota stone shelves 30mm thick (polished from one side) in almirahs and storage spaces including cutting chase in the masonry fixing of shelves with cement mortar and making good the chase.	61.316	Sq.M.		
7.18	Providing and fixing Sand stone Jali 40mm thick with sinking and moulding work to match the existing jali or as per approved design and sample, in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing in white cement mortar 1:2 (1 cement : 2 stone dust) with an admixture of pigment matching the shade of sand stone used.				

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
7.18.1	Using polished Dholpur sand stone to match existing stone jalis	**23.412**	**Sq.M.**		
7.19	Providing and Laying special flooring motifs and pattern inlaid with various stones, coloured marble mosaic as per design provided by the architect	**r.o.**	**Sq.M.**		
7.20	Providing and fixing of precast concrete interlocking paver blocks of M30 grade manufactured from fully computerised automatic stationary hydraulic vibropressed machine and fully computerised automatic batching plant of class A1/A2 as per BIS 6717:2001. The CC interlocking pavers shall be laid on average 50mm thick bed of caorse sand and the joints filled with fine sand.				
7.20.1	60mm thick	**r.o.**	**Sq.M.**		
7.20.2	80mm thick	**r.o.**	**Sq.M.**		
7.20.3	100mm thick	**r.o.**	**Sq.M.**		
7	**SUBTOTAL FLOORING, TILE and STONE WORK**				
8	**ROOFING**				
	Note: The Item rates quoted shall be for all floors, heights, shapes and places				
8.4	Providing and Laying following type(s) of Gola (Batta)				
8.4.1	Providing gola 75 x 75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design, in 75x75 mm deep chase.	**291.236**	**R.M.**		
8.5	Making Khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over PVC sheet 1 m x 1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	**16**	**EACH**		
8.7	Providing and Laying following type(s) of Water Proofing treatment(s)				
8.7.1	Providing and laying in-situ Six course water proofing treatment with APP (Atactic Polypropylene) modified Polymeric membrane 2.5mm thick of 3.25kg/sq.m.consisting of five layers prefabricated with centre core as 20micron HMHDPE film sandwiched on both sides with polymeric mix and the polymeric mix protected on both sides with 20 micron thick HMHDPE film, of approved brand consisting of following operations:	**r.o.**	**Sq.M.**		
8.7.2	Providing and Laying three layers of High Build Nano Modified PU (Polyurethane) Coatings with FRP fiber Mesh reinforcements to all corners and cracks to Roof areas. The treatment shall be carried at least 1'-0" (300mm) on the parapet walls. The roof to be treated shall be first flooded to check for cracks, which shall be repaired with the required and approved material. The whole terrace so finished shall be flooded with water for a minimum period of one week for testing. In case of leakage the water proofing shall be repaired by repeating the whole process and the flooding test repeated to ensure zero seepage of moisture in the underlying structure and a guarantee of water proofing for 10 years after its completion. Treatment of vertical and horizontal surfaces of depressed portions of toilets/kitchens and the like shall be protected with a rich cement plaster of grade 1:4 (1 cement : 4 coarse sand) admixed with water proofing compound of thickness not less than 15mm as described in item no. 8.17, to be paid for separately.	**108.069**	**Sq.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
8.7.3	Providing and laying water proofing treatment on roofs of slabs by applying cement slurry mixed with water proofing cement compound consisting of applying: a) after surface preparation, first layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm. b) laying second layer of Fibre glass cloth when the first layer is still green. Overlaps of joints of fibre cloth should not be less than 10 cm. c) third layer of 1.5 mm thickness consisting of slurry of cement @ 1.289 kg/sqm mixed with water proofing cement compound @ 0.670 kg/sqm and coarse sand @ 1.289 kg/sqm. This will be allowed to air cure for 4 hours followed by water curing for 48 hours. The entire treatment will be taken upto 30cm on parapet wall and tucked into groove in parapet all around. d) fourth and final layer of brick tiling or other approved finish shall be laid in cement mortar (which will be paid for separately For the purpose of measurement the entire treated surface will be measured.	2029.888	Sq.M.		
8.9	Providing and laying Broken Ceramic tile/china mosaic terracing with primarily white broken/waste ceramic tiles, 6mm thick laid in panels of crazy pattern as per design with 20mm expansion gaps between panels over 12mm thick cement mortar 1:3 (1 cement : 3 coarse sand) mixed with 2% integral water proofing compound by weight of cement, grouted and finished neat with cement mortar 1 cement : 1 marble dust mixed with 2% integral water proofing compound by weight of cement. The expansion joints between panels shall be filled with blown bitumen.	1925.012	Sq.M.		
8.14	Providing labour and tools for laying proprietary water proofing treatment to roofs, balconies, terraces, sunken slabs etc. as per manufacturers specifications including cleaning of surfaces before treatment, providing required equipment and labour for the same (Water Proofing Chemicals shall be provided by the Owner)	r.o.	Sq.M.		
8.15	Providing and laying 'Kullhad' coba using earthen pots of varying sizes laid upside down over the roof surfaces with a gap of 8 to 10mm in between which is filled with cement mortar 1:5 (1 cement : 5 coarse sand) admixed with proprietary water proofing compound over 20mm thick layer of cement mortar mixed with proprietary water proofing compound to required slope, including rounding of junctions of walls and slabs and curing, providing required equipment and labour for the same.	1830.303	Sq.M.		
8.16	Providing and laying average 110mm thick BRICK BAT COBA using broken brick bats 25mm to 100mm nominal size with 50% cement mortar 1:4 (1 cement : 4 coarse sand) admixed with proprietary Latex/SBR water proofing compound over 20mm thick layer of cement mortar mixed with proprietary SBR/Latex water proofing compound to required slope finished with a final top layer of 20mm thick layer of cement mortar mixed with proprietary SBR/Latex water proofing compound including rounding of junctions of walls and slabs, marking a grid of 300mm x 300mm on the finished surface including curing, providing required equipment and labour for the same.	r.o.	Sq.M.		
8.17	Providing and laying 30 to 40mm thick jointless cement concrete of mix 1:2:4 (1 cement: 2 coarse sand: 4 aggregate 6-10mm nominal size) admixed with proprietary water proofing compound after applying a coat of cement slurry mixed with proprietary water proofing compound and finally finishing the surface with trowel with neat cement slurry and marking a grid of 600mm x 600mm. The whole terrace so finisihed shall be flooded with water for a minimum period of two weeks for curing and final testing, including redoing the above operations in areas where leaks are detected. The item includes providing all required equipment and labour for carrying out the work.	r.o.	Sq.M.		
8.18	Providing and laying 15mm cement mortar screed (1:4, 1 cement : 4 coarse sand) to protect water proofing treatment to roofs, balconies, terraces, sunken slabs etc.	1830.303	Sq.M.		
8.19	Providing and laying following types of false ceiling				

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
8.19.1	Providing and fixing at all height false ceiling including providing and fixing of frame work made of special sections power pressed from M.S. sheet and galvanised in accordance with zinc coating of grade 350 as per IS : 277 and consisting of angle cleats of size 25mm wide x 1.6mm thick with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with dash fastener 12.5mm diax40mm long with 6mm dia bolts to the angle hangers of 25x25x0.55mm of required length, and other end of angle hanger being fixed with nut and bolts to G.I. channels 45x15x0.9mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick button wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to G.I. channel with connecting clips made out of 2.64mm diax230mm long G.I. wire at every junction including fixing the gypsum board with ceiling section and perimeter channels 0.5mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the board with recommended filler, jointing tapes, finisher and two coats of primer suitable for board as per manufactures 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 drawing and specification and direction of the Engineer in Charge but excluding the cost of painting with : 12.5 mm thick tapered edge gypsum board conforming to IS: 2095- Part I	**r.o.**	**Sq.M.**		
8.19.2	Providing and fixing tiled False Ceiling of approved materials of size 595x595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanized @ 170 gsm/sqm.) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38mm made from 0.30mm thick (minimum) sheet spaced at 1200mm center to center and cross "T" of size 24x25mm made of 0.30mm thick (minimum) sheet, 1200mm long spaced between main "T" at 600mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600mm and size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x600mm and wall angle of size 21x21x0.3mm and laying false ceiling tiles of approved texture in the grid including, wherever, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats fixed to ceiling with 6 mm dia and 50mm long dash fasteners, 4mm GI adjustable rods with galvanised level clips spaced at 1200mm center to center along main T, bottom exposed width of 24mm of all T-sections shall be pre-painted with polyester paint, all complete at all heights as per specifications drawings and as directed by Engineer-in-Charge. (The rate is excluding the cost of tiles which will be paid for separately).	**108.069**	**Sq.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
8.19.4	Providing and fixing at all height false ceiling including providing and fixing of frame work made of special sections power pressed from M.S. sheet and galvanised in accordance with zinc coating of grade 350 as per IS : 277 and consisting of angle cleats of size 25mm wide x 1.6mm thick with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with dash fastener 12.5mm diax40mm long with 6mm dia bolts to the angle hangers of 25x25x0.55mm of required length, and other end of angle hanger being fixed with nut and bolts to G.I. channels 45x15x0.9mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick button wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to G.I. channel with connecting clips made out of 2.64mm diax230mm long G.I. wire at every junction including fixing the gypsum board with ceiling section and perimeter channels 0.5mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval including jointing and fixing Providing 10 mm thick plaster of Paris (gypsum anhydrous) ceiling up to a height of 5 m above floor level and reinforced with rabbit wire mesh fixedand 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 drawing and specification and direction of the Engineer in Charge but excluding the cost of painting with : 10 mm thick plaster of Paris (gypsum anhydrous) ceiling up to a height of 5 m above floor level and reinforced with rabbit wire mesh fixed to frame	**r.o.**	**Sq.M.**		
8.20	Providing and laying Stone Slab Roofing on Ground Floor with fine grained stone slab from approved quarry including filling of joints of parapet and slabs on both sides in cement sand mortar 1:4, ralthal, stone kharanja, lime terracing of 90mm average thickness (as per Jaipur practice) with ceiling pointing in cement sand mortar 1:3 complete as specification for the following spans				
8.20.1	Up to 2.00 meter	**r.o.**	**Sq.M.**		
8.20.2	Above 2.00 meter and up to 2.50 meter	**r.o.**	**Sq.M.**		
8.20.3	Above 2.50 meter and up to 3.00 meter	**r.o.**	**Sq.M.**		
8.20.4	Above 3.00 meter and up to 3.30 meter	**55.393**	**Sq.M.**		
8.21	Add extra over 8.19 for subsequent storey				
8.21.1	First Floor	**r.o.**	**Sq.M.**		
8.21.2	Second Floor	**r.o.**	**Sq.M.**		
8.21.3	Third Floor	**55.393**	**Sq.M.**		
8.25	ROOFING COLOUR COATED HI PROFILE SHEETING Supplying and fixing permanently colour coated hi rib profiled sheets (size, shape and pitch as approved by Engineer-in-charge). Hi profiled sheets shall be minimum 0.5 TCT galvalume or zincalume steel sheet having minimum yield strength of 550 Mpa, with a coating of mass of minimum 150 gsm (Aluminium Zinc alloy). The Galvalume steel sheet shall be finished with 20 microns of silicon modified polyester (SMP) colour coating (approved colour) over an epoxy primer coat of 5 micron. The sheet shall also have a back coat of 5 microns on reverse side over 5 microns primer coat. The sheet shall be fixed over the purlins with hexagonal head self drilling fasteners of 12 - 14 x 55 mm long including neoprene/EPDM washer on each crest of sheet. The maximum end lap of sheet shall be 150 mm and sealed with silicon sealent. The work shall include of all labour, equipments, materials, cost of consumables, fasteners, washers, scaffolding etc complete in all respect as directed by Engineer-in-charge. Payment would be made on the basis of roof area covered by the sheets.				

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
8.25.1	Supply and erection of roof sheeting sheet having total coated thickness of 0.5mm (Make : TATA Bluescope / JSW)	**r.o.**	**Sq.M.**		
8.25.2	Supply and erection of side wall sheeting having total coated thickness of 0.5mm (Make : TATA Bluescope / JSW)	**r.o.**	**Sq.M.**		
8.25.3	Supplying and fixing Galvalume Ridge Sheet 0.5 mm thick standard profile roofing 550 MPa Yield strength including using self drilling screws, washer, labour, scaffolding all complete as per specifications and directions of Engineerin-charge.	**r.o.**	**R.M.**		
8	**SUBTOTAL ROOFING**				
9	**FINISHING**				
	Note: The Item rates quoted shall be for all floors, heights, shapes and places				
9.1	12 mm cement plaster of:				
9.1.1	mix 1:4 (1 cement : 3 fine sand: 1 coarse sand)	**r.o.**	**Sq.M.**		
9.1.2	mix 1:6 (1 cement : 4 fine sand: 2 coarse sand)	**462.191**	**Sq.M.**		
9.2	15 mm cement plaster on rough side of single or half brick wall or stone masonry wall.				
9.2.1	mix 1:4 (1 cement : 3 fine sand: 1 coarse sand)	**r.o.**	**Sq.M.**		
9.2.2	mix 1:6 (1 cement : 4 fine sand: 2 coarse sand)	**115.548**	**Sq.M.**		
9.2a	25 mm cement plaster on rough side of stone masonry wall				
9.2a.1	mix 1:4 (1 cement : 3 fine sand: 1 coarse sand)	**r.o.**	**Sq.M.**		
9.2a.2	mix 1:6 (1 cement : 4 fine sand: 2 coarse sand)	**2310.956**	**Sq.M.**		
9.3	6 mm cement plaster to ceiling, RCC works of mix 1:3 (1 cement : 3 fine sand) with 6 mm x 12 mm grooves between wall/beam and ceiling junction.	**r.o.**	**Sq.M.**		
9.4	Extra for a floating coat of neat cement punning.	**118.876**	**Sq.M.**		
9.5	Providing drip course in plastered surface , 1:3 (1 cement :3 fine sand) cement plaster.	**243.840**	**R.M.**		
9.7	18 mm thick cement plaster in sunken areas of kitchen/toilets in two coats, under layer 12 mm thick cement plaster 1:4 (1 cement :4 coarse sand) finished with a top layer of 6 mm thick cement plaster 1:3 (1 cement: 3 fine sand) including mixing of water proofing compound of approved make in both layers, in the proportions recommended by the manufacturer. The top layer shall be finished with a floating coat of neat cement punning.	**108.069**	**Sq.M.**		
9.8	White washing with lime to give an even shade : new work (three or more coats).	**r.o.**	**Sq.M.**		
9.9	Colour washing such as pale yellow, green, blue or any other colour and shade as approved by Engineer to give an even shade on new work (two or more coats) over a base coat of white washing with lime.	**r.o.**	**Sq.M.**		
9.10	Providing and laying types of Punning to internal walls and ceilings so as to get even and smooth surfaces				
9.10.1	Providing and applying 5 to 8mm thick plaster of paris (gypsum anhydrous) punning to internal walls and ceilings so as to get even and smooth surface in plumb and level to respective levels.	**r.o.**	**Sq.M.**		
9.10.2	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	**r.o.**	**Sq.M.**		
9.10.3	Providing and applying white cement based putty of average thickness 2 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	**r.o.**	**Sq.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
9.12	Finishing walls with two or more coats of oil bound distemper paint of approved brand (Asian Tractor) and manufacture of required shade to give an even shade on new works including preparation of surface with cement primer, filling material sandpapering etc. complete.	**r.o.**	**Sq.M.**		
9.13	Finishing walls with three or more coats of water proof polymer paint of approved brand ('ICI – Supercoat', Asian Apex Ultima) and manufacture of required shade to give an even shade on new works.	**231.096**	**Sq.M.**		
9.16	Painting with two or more coats of synthetic enamel paint of approved brand and manufacture including preparation of surface and appropriate approved primer to give an even shade for wood/steel work.	**455.957**	**Sq.M.**		
9.17	French spirit polishing with two or more coats as necessary on new works, including a coat of wood filler with necessary cleaning, sand papering, smoothening etc. complete, to give a smooth and glossy surface.				
9.17.1	Glazed/jali Doors and windows	**r.o.**	**Sq.M.**		
9.17.2	Solid Doors	**r.o.**	**Sq.M.**		
9.17.3	Door and Window frames	**r.o.**	**R.M.**		
9.17.4	Moulding	**285.750**	**R.M.**		
9.19	Pointing on Masonry work with cement mortar 1 cement : 3 fine sand				
9.19.3	Struck or weathered recessed pointing on coursed stone walls as per approved sample	**1188.569**	**Sq.M.**		
9.19.4	Flush pointing on stone walls as per approved sample (kilkilkathi)	**859.650**	**Sq.M.**		
9.20	Ornamental Plaster on Round pillars etc. mix 1:4 (1 cement : 3 fine sand: 1 coarse sand) as per BSR Item 12.25, page no. B132)	**417.451**	**Sq.M.**		
9.21	Providing and laying 2 to 5mm thick plaster of paris (gypsum anhydrous) or 1 to 2mm White Cement based Putty punning and Finishing walls with two or more coats of oil bound distemper paint of approved brand (Asian Tractor) and manufacture of required shade to give an even shade on new works including preparation of surface with cement primer, filling material sandpapering etc. complete.	**3532.032**	**Sq.M.**		
9.22	Providing and applying 12 mm thick (average) premixed formulated one coat gypsum lightweight plaster having additives and light weight aggregates as vermiculite/ perlite respectively conforming to IS: 2547 (Part - 1 & II) 1976, applied on hacked / uneven background such as bare brick/ block/ RCC work on walls & ceiling at all floors and locations, finished in smooth line and level etc. Complete.	**r.o.**	**Sq.M.**		
9	**SUBTOTAL FINISHING**				
10	**MISCELLANEOUS CIVIL WORKS**				
	Note: The Item rates quoted shall be for all floors, heights, shapes and places				
10.1	Extra for providing and mixing water proofing compound of approved make and manufacturer in cement concrete work in the proportion as specified by the manufacturer (base rate Rs..... per Kg.).	**20.000**	**KG**		
10.2	Providing and fixing 24 SWG G.I chicken wire mesh with nails etc. as directed by architect at the junction of brick and RCC works and at MS conduits in walls.	**231.096**	**Sq.M.**		
10.3	Demolishing following work manually/ by mechanical means and disposal of material within 50 metres lead as per direction of Engineer in-charge.				
10.3.1	RCC work	**9.111**	**Cu.M.**		
10.3.2	PCC work	**278.938**	**Cu.M.**		
10.3.3	Brick work	**14.158**	**Cu.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
10.3.4	Stone Rubble Wall	**18.063**	**Cu.M.**		
10.3.5	Plaster	**r.o.**	**Sq.M.**		
10.3.6	Stone Flooring incl. base concrete	**18.581**	**Sq.M.**		
10.3.8	Door and Window frames	**2**	**EACH**		
10.3.9	Bhilwara or similar stone slab roofing	**30.310**	**Sq.M.**		
10.3.10	Ceiling Plaster	**r.o.**	**Sq.M.**		
10.13	Extra for addition of synthetic Polyester triangular fibre of length 6 mm, effective diameter 10-40 microns and specific gravity of 1.34 to 1.40 in cement plaster/mortar by using 125 gms. of synthetic Per Bag of Polyester triangular fibre for 50 Kgs. cement used in cement mortar 50 Kg of as per directions of Engineer-in- Charge with all leads and lifts..	**200.000**	**125 gm Pouch**		
10.15	Providing and fixing approved galvanized 2mm thick welded wire mesh of size 50mm x 50mm including cutting to required sizes, with min. 75mm overlaps for roof concrete or coping slabs etc. complete	**r.o.**	**Sq.M.**		
10.16	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	**436.734**	**Cu.M.**		
10.17	Providing and fixing Stainless steel Grade 304 plate-1.0 mm covering of approved pattern & design, made out of machine cut stainless steel sheet and machine holed for receiving dash fastener, over expansion joints on vertical surfaces/ceiling floors, the fixing on plate in one row on one side of joint only shall be done with stainless steel dash fasteners of 8 mm dia and 75 mm long bolt including providing aluminium washers 2 mm thick & 15 mm dia , at a staggered pitch of 200mm centre to centre including drilling holes in the receiving surface and providing expandable plastic sleeves in holes etc. complete as per direction of Engineer-in-charge.Providing and fixing in position thick as per design for expansion joints.				
10.16.2	300 mm wide	**46.762**	**R.M.**		
10.18	Providing and erecting temporary barricading at site; each panel of size 2.50mx2.00m made of 40x40x6mm angle iron or 50x50x3mm hollow MS tube posts/horizontal members/bracings covered with 1.63mm thick MS sheet. The sheet shall be fixed with 30x5mm MS flat by suitable welding/riveting. The panels shall be made so that gap of 15cm above the ground is available MS channel ISLC 75 @ 5.70 kg/m, 50cm long shall be provided at the bottom having oval shaped holes of size 50x25mm at both ends with 50cm long MS angle 40x40x6mm bracing. Suitable arrangement shall be made to fix the barricading to avoid from overturning by providing 250mm long expansion fasteners at both ends. The work shall be executed as per drawing/direction of Engineer-in-Charge which includes writing and painting, reflective signs, marking, flags, caution tape as directed by the Engineer-in-Charge. The barricading provided shall be retained in position at site continuously i/c shifting of barricading from one location to another location as many times as required during the execution of the entire work till its completion. Rate include its maintenance for damages, painting, all incidentals, labour materials, equipments and works required to execute the job. The barricading shall not be removed without prior approval of Engineer-in-Charge. (Note :- One time payment shall be made for providing barricading from start of work till completion of work i/c shifting. The barricading provided shall remain to be the property of the contractor on completion of the work).	**r.o.**	**Sq.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
10.19	Providing and fixing 50mm polystyrene board (thermocole) in expansion joint	**156.077**	**Sq.M.**		
10	**SUBTOTAL MISCELLANEOUS CIVIL WORKS**				
	SCHEDULE OF QUANTITIES FOR SANITARY, PLUMBING, SEWERAGE & WATER SUPPLY				
11	**SANITARY WARE, FIXTURES & FAUCETS AND TOILET REQUISITES**				
	NOTE: THE QUOTED ITEM RATES SHALL BE FOR ALL FLOORS, HEIGHTS AND PLACES. ALL VITREOUS CHINAWARE, KITCHEN SINKS, FAUCETS & TAPS, FIXTURES AND TOILET REQUISITES ETC. SHALL BE PROVIDED BY THE OWNER, RATES QUOTED SHOULD INCLUDE LABOUR FOR FIXING OF THE SAME.				
11.1	Fixing white vitreous china water closet squatting pan (Indian type ORISSA WC pan of size 580 x 440 mm) with 100 mm sand cast iron "P/S" trap, 5 litres low level PVC flushing cistern (of approved make) with ISI marked internal PVC fittings, 32 mm flush pipe with fittings and clamps, 20 mm overflow pipe with specials of standard approved make, 15 mm dia C.P. brass angle valve with wall flange and necessary C.P. connecting pipe with nuts and mosquito proof coupling of approved design complete including cutting and making good the walls and floors and painting wherever required :	**2**	**EACH**		
11.2	Fixing white vitreous china pedestal type water closet (European type) with white plastic seat and lid with C.P. brass hinges and rubber buffers, 5 litres low level PVC flushing cistern (of approved make) with ISI marked internal PVC fittings, 32 mm flush pipe with fittings and clamps, with specials of standard approved make, of approved municipal design complete including cutting and making good the walls, floors and painting wherever required. (Parryware Cascade or equivalent of base rate Rs.9000.00)	**12**	**EACH**		
11.4	Providing and fixing white vitreous china wash basin with M.S. or C.I. brackets painted white with two coats of white enamel paint of approved make over a coat of zinc chromate primer, with following accessories including cutting and making good the walls and floors, wherever required along with following accessories:				
	(i) 32 mm dia C.P. brass waste with C.P. brass chain and rubber plug.				
	(ii) 32 mm dia C.P. bottle trap with tail piece and wall flange.				
	(iii) 15 mm dia C.P. Pillar Cock				
	(iv) 15 mm dia C.P. angle valve with wall flange and necessary C.P. copper connection pipes, nuts etc.				
11.4.1	Size : 600 x 460 mm (Parryware Cascade)	**12**	**EACH**		
11.5	Fixing of single piece cast stainless steel sink with drain board, 1 mm thick kitchen sink as per I.S. 13983 including cutting and making good the walls and slabs etc. wherever required and including all necessary accessories like 40 mm dia C.P. brass waste with C.P brass chain and rubber plug, 32 mm PVC waste pipe of required length with coupling, with M.S. or C.I. brackets painted white, complete item in all respects of sizes:				
11.5.1	610 mm x 460 mm (bowl depth 200mm)	**r.o.**	**EACH**		
11.5.2	460 mm x 915 mm (bowl depth 200mm)	**r.o.**	**EACH**		
11.6	Providing and fixing required size 5.5 mm **bevelled edge mirror** of superior glass (of approved quality) with 15mm wide bevelling all-round complete with 6 mm thick asbestos sheet ground fixed with C.P. brass screws and washers with rawl plugs/wooden cleats.	**8.361**	**Sq.M.**		
11.7	Fixing of 600 x 20 mm C.P. brass towel rail of approved quality complete with brackets fixed with C.P. brass screws and washers with rawl plugs.	**6**	**EACH**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
11.8	Fixing 150 x 150 mm size recessed vitreous china toilet paper holder including cutting and making good the walls.	**14**	**EACH**		
11.9	Fixing of C.P. brass twin robe hooks of approved make, fixed with C.P. brass screws and washers with rawl plugs/wooden cleat.	**14**	**EACH**		
11.10	Fixing of approved make 15 mm dia C.P. brass short body bib cock with C.P. brass wall flange and C.P. brass extension piece.	**8**	**EACH**		
11.13	Fixing of the approved make 15 mm dia C.P. brass angle valve with wall flange and necessary copper connection pipe with nuts.	**26**	**EACH**		
11.18	Fixing of the approved make white vitreous china flat back or single half stall urinal of 580 x 380 x 350 mm with PVC automatic flushing cistern of approved make with fittings CI/MS brackets, standard size CP brass flush pipe, spreaders with union and clamps (all in CP brass) with waste fitting as per IS:2556, C.I. trap with out let grating and other couplings in CP brass including painting of fittings and brackets, cutting and making good the walls, floors wherever required				
11.18.1	Single Urinal with automatic flushing cistern or equivalent water connection.	**r.o.**	**EACH**		
11.19	Fixing white vitreous china battery/electrical based infra-red sensor operated urinal of approx. Size 610 x 390 x 370 mm having pre and post flushing with water (250ml and 500ml consumption) having water inlet from back side including fixing to wall with suitable brackets all as per manufacturers specification and direction of engineer in charge.	**5**	**EACH**		
11.20	Fixing of the approved make C.P. brass 100mm dia grating.	**24**	**EACH**		
11	**TOTAL FOR SANITARY WARE, FIXTURES & FAUCETS CARRIED OVER TO SUMMARY**				
12	**SOIL, WASTE, VENT AND RAIN WATER PIPES & FITTINGS**				
	Note: The quoted Item rates shall be for all floors, heights, shapes and places				
12.1	Providing and fixing UV stabilised uPVC SWR Drainage system of grade TYPE B for SOIL, WASTE, RAIN AND VENT pipes of approved make including fittings and specials, conforming to relevant Indian Standards (IS 13592-92) including bends, foot rest bends, tees, junctions (with and without doors) cowls, off-sets, clamps, stays etc. joined with approved Rubber Ring socketed joints, chase cutting and making good the walls, floors etc., excavation and back filling in all kinds of soil, embedding the pipes laid under ground/building in 1:4:8 cement concrete (1 cement : 4 coarse sand : 8 graded stone aggregate 20 mm nominal size) 50 mm all around, including cost of shuttering, complete in all respects including painting of exposed pipes with two coats enamel paint of approved shade and quality over a coat of primer, etc.:				
12.1.1	160 mm dia	**45.720**	**R.M.**		
12.1.2	110 mm dia	**152.400**	**R.M.**		
12.1.3	75 mm dia	**38.100**	**R.M.**		
12.2	Providing and fixing of heavy uPVC FLOOR TRAPS, self cleaning type having 50 mm deep water seal and conforming to IS:1729 with 150 mm dia and not less than 16 SWG thick stainless steel grating, including boxing the floor trap with 1:4:8 cement concrete (1 cement : 4 coarse sand : 8 graded stone aggregate 20 mm nominal size)				
12.2.1	100 mm inlet 75 mm outlet	**24**	**EACH**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
12.7	Providing and fixing PVC pipe of 4 kg/sq.cm. working pressure including all type of fittings conforming to IS:4985-1981 including G.I. hinges and specials conforming to IS: 7834-1975, jointing with solvent cement, fixing complete pipes with PVC/MS holder bat clamps, including testing of complete installation:				
12.7.1	160 mm dia	**30.480**	**R.M.**		
12.7.2	110 mm dia	**304.800**	**R.M.**		
12.7.3	75 mm dia	**30.480**	**R.M.**		
12.8	Providing and fixing 5 mm thick cast iron grating in floor or wall including making good the walls and floors wherever required:				
12.8.1	150 mm square	**4**	**EACH**		
12.8.2	100 mm square	**2**	**EACH**		
12	TOTAL OF SOIL, WASTE, VENT AND RAIN WATER PIPES & FITTINGS CARRIED OVER TO SUMMARY				
13	INTERNAL/ EXTERNAL WATER SUPPLY				
	Note: The quoted Item rates shall be for all floors, heights, shapes and places				
13.3	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply , including all CPVC plain & brass threaded fittings and specials, 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				
13.3.1	15mm nominal outer dia pipes	**r.o.**	**R.M.**		
13.3.2	20mm nominal outer dia pipes	**r.o.**	**R.M.**		
13.3.3	25mm nominal outer dia pipes	**60.960**	**R.M.**		
13.3.4	32mm nominal outer dia pipes	**45.720**	**R.M.**		
13.3.5	40mm nominal outer dia pipes	**60.960**	**R.M.**		
13.3.6	50mm nominal outer dia pipes	**76.200**	**R.M.**		
13.4	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal st ability for hot & cold water supply , including all CPVC plain & brass threaded fittings and specials, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making 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.				
13.4.1	15mm nominal outer dia pipes	**45.720**	**R.M.**		
13.4.2	20mm nominal outer dia pipes	**91.440**	**R.M.**		
13.4.3	25mm nominal outer dia pipes	**106.680**	**R.M.**		
13.4.4	32mm nominal outer dia pipes	**24.384**	**R.M.**		

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
13.5	Domestic, flushing and Hot water supply (Internal Works)-Providing and fixing CPVC (Chlorinated Poly Vinyl Chloride) water supply pipes with pipe as per CTS SDR 11 (operating pressure - 7 Bar @ 82 Deg C and 28 Bar @ 23 Deg C)for pipes from 1/2 Inch to 2 Inch. Schedule 40 Pipe to be used from 2-1/2 Inch to 6 Inch. Pipes shall be joined using solvent welded CPVC fittings i.e. Tees, Elbows, Couplers, Unions, Reducers, brushings etc. including transition fittings (connection between CPVC & metal pipe/GI) i.e. Brass Adaptors (both Male & Female threaded) conforming to ASTM D-2846. ASTM F441 with only CPVC solvent cement conforming to ASTM F-493. All termination points for installation of faucets shall have brass termination fittings. Installation shall be to as per Technical Manual of manufacturer of pipes & fittings. Cost shall be inclusive of Fixing/supporting the pipes (& fittings) at wall/ceiling level supported by galvanized clamps, hangers etc, as per specification - EXPOSED ON WALL.				
13.5.1	15 mm dia	**r.o.**	**R.M.**		
13.5.2	20 mm dia	**r.o.**	**R.M.**		
13.5.3	25 mm dia	**r.o.**	**R.M.**		
13.5.4	32 mm dia	**r.o.**	**R.M.**		
13.5.5	40 mm dia	**r.o.**	**R.M.**		
13.6	Providing and fixing cPVC **full way ball valve**, conforming to IS:778:1984 :				
13.6.2	20 mm dia	**2**	**EACH**		
13.6.3	25 mm dia	**3**	**EACH**		
13.6.4	32 mm dia	**2**	**EACH**		
13.6.5	40 mm dia	**2**	**EACH**		
13.6.6	50 mm dia	**2**	**EACH**		
13.6.7	65 mm dia	**r.o.**	**EACH**		
13.7	Providing and fixing brass ball valve with PVC float, high pressure type conforming to IS:1703-1977 :				
13.7.1	15 mm dia	**r.o.**	**EACH**		
13.7.2	20 mm dia	**2**	**EACH**		
13.7.3	25 mm dia	**r.o.**	**EACH**		
13.8	Disinfecting all water supply lines, UG tank and OH tank by flushing with water containing bleaching powder at 0.5 gm per litre of water and cleaning the same with fresh water, operation to be repeated three times including getting the samples of water from the disinfected main tested in the municipal laboratory.	**1**	**JOB**		
13.10	Providing and fixing PVC water tank of approved quality and make including making all tank connections for water supply lines:				
13.10.1	500 litre capacity	**1**	**EACH**		
13.10.2	1000 litre capacity	**2**	**EACH**		
13.10.3	1500 litre capacity	**2**	**EACH**		
13.10.4	2000 litre capacity	**r.o.**	**EACH**		
13	**TOTAL OF INTERNAL/EXTERNAL WATER SUPPLY CARRIED OVER TO SUMMARY**				

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
14	**SEWERAGE**				
	Note: The quoted Item rates shall be for all shapes and places				
14.3	Providing and fixing square mouth SW gully trap grade "A" complete with C.I. grating brick masonry chamber with bricks of class designation 75 and water tight Poly-crete covers and frame of 300 x 300 mm size (inside) conforming to ISI load test:				
14.3.1	100 x 100 mm size "P" type	**3**	**EACH**		
14.4	Constructing brick masonry manhole with 75 class designation bricks in cement mortar 1 : 5 (1 cement : 5 coarse sand) RCC top slab with 1:2:4 mix (1 cement :2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size) inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) neatly finished including excavation and fixing M.S. Foot rests of 16mm square bars complete as per standard design :				
14.4.1	Inside size 90x80 cm and 75 cm deep including CI cover and frame of size 455 mm x 610 mm (internal dimensions) min. weight of 38kg (cover 25kg+frame 15kg.) conforming to ISI load test.	**4**	**EACH**		
14.5	Add or deduct for increase or decrease in depth of manholes :				
14.5.1	Size 90 x80 cm with FPS bricks.	**1.210**	**R.M.**		
14.14	Constructing brick masonry road gully chamber 110x50x77.5 cm with bricks of class designation 75 in cement mortar 1:5 (1 cement : 5 coarse sand) including precast RCC horizontal grating 500x450mm as per standard design:				
1.3.1	With FPS bricks	**6**	**EACH**		
14.15	Constructing soak pit 2.5m. Diameter, 3.0m. deep with 45 x 45 cm dry brick honeycomb shaft with bricks of class designation 75.				
14.15.1	With FPS bricks	**1**	**EACH**		
14.16	Constructing Septic Tank as per standard design with bricks of class designation 75:				
14.16.1	With FPS bricks of 15 cum. Capacity	**1**	**EACH**		
14.17	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design:				
14.17.1	100 mm diameter S.W. pipe	**60.960**	**R.M.**		
14.17.2	150 mm diameter S.W. pipe	**60.960**	**R.M.**		
14	**TOTAL OF SEWERAGE CARRIED OVER TO SUMMARY**				
	SUMMARY OF COST OF WORKS				
	CIVIL WORKS				
1	**EARTH WORK**				
2	**CONCRETE WORK**				
3	**REINFORCED CEMENT CONCRETE**				
4	**MASONRY WORK**				
5	**WOOD & PVC WORK**				

S.No.	Description	Estimated Qty.	Unit	Tendered Rate	Tendered Amount
6	STEEL and ALUMINIUM WORK :				
7	FLOORING, TILE and STONE WORK				
8	ROOFING				
9	FINISHING				
10	MISCELLANEOUS CIVIL WORKS				
	SUB TOTAL CIVIL WORKS				
	PLUMBING, WATER SUPPLY AND SEWERAGE				
11	SANITARY WARE, FIXTURES & FAUCETS AND TOILET REQUISITES				
12	SOIL, WASTE, VENT AND RAIN WATER PIPES & FITTINGS				
13	INTERNAL/ EXTERNAL WATER SUPPLY				
14	SEWERAGE				
	SUB TOTAL PLUMBING, WATER SUPPLY AND SEWERAGE				
	ELECTRICAL WORK				
	FIRE FIGHTING WORKS				
	TOTAL WORK				
	Discount / GST Rebate				
	Amount after Discount / GST Rebate				
	Add GST		18.00%		
	Add Labour Welfare Cess		1.00%		
	Total With GST and Cess				

S.No	Description				Amount
I	SUB HEAD: INTERNAL WIRING				
II	SUB HEAD: SUPPLY OF LIGHTING FIXTURE AND FANS				
III	SUB-HEAD: INSTALLATION OF FIXTURE AND FANS				
IV	SUB HEAD : DISTRIBUTION BOARDS				
V	SUB HEAD: TELEPHONE & DATA				
VI	SUB-HEAD : CCTV SYSTEM (INTEGRATION WITH EXISTING SYSTEM)				
VII	SUB-HEAD VII : PA SYSTEM (INTEGRATION WITH EXISTING SYSTEM)				
	TOTAL:-				
	SCHEDULE OF QUANTITIES FOR INTERNAL INSTALLATION ELECTRICAL WORKS FOR 2nd FLOOR				
	AT MAYOOR SCHOOL PRIMARY BLOCK AJMER				
S.NO.	**DESCRIPTION OF ITEM**	**UNIT**	**QTY**	**RATE**	**AMOUNT**
	SUB-HEAD I: INTERNAL WIRING				
	All wiring Item including provision of conduit, conduit accessories, switch, box and all fitting completed as required.				
1	Point 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 medium class PVC Conduit, with modular switch,regulator,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.	Each	250		
2	Point wiring for group controlled (looped) light point / fan point /exhaust fan point/ call bell point (without independent switch) 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.	Each	140		
3	Point wiring for 6 amp socket outlet points with 3x1.5 sq. mm. (P+N+E) FRLS PVC insulated 1100 volt grade stranded copper conductor wires in IS 25mm dia 2 mm thick PVC conduit recessed and / or surface conduiting system including the cost of cutting / making good chases in brick work and including the cost of supplying and fixing modular grid plate mounted 240volt 6amp. 5 pin combined shuttered socket outlets along with 240 volt 6 amp. controlled switch housed in zinc chromate passivated MS boxes with moulded cover plate and including the cost of loop earthing with 1.5 sq. mm. FRLS PVC insulated 1100 volt grade stranded copper conductor wires complete as per specifications and as required.	Each	220		

S.NO.	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
4	Point wiring for 16 amp socket outlet points (1 outlet wired on 1 circuit) with 3x2.5 sq. mm. (P+N+E) FRLS PVC insulated 1100 volt grade stranded copper conductor wires in IS 25mm dia 2 mm thick PVC conduit recessed or surface conduiting system including the cost of cutting / making good chases in brick work and including the cost of supplying and fixing modular grid plate mounted 220volt 16amp. 6 pin combined shuttered socket outlets along with 220 volt 16 amp. Controlled switch of housed in zinc chromate passivated MS boxes and including the cost of loop earthing with 2.5 sq. mm. FRLS PVC insulated 660/1100 volt grade stranded copper conductor wires complete as per specifications and as required.	Point	12		
5	Point wiring for 16 amp socket outlet points (2 outlet wired on 1 circuit) with 3x4 sq. mm. (P+N+E) FRLS PVC insulated 1100 volt grade stranded copper conductor wires in upto first outlet and 2.5 wire sq. mm. Wire for the looped outlet in IS 25mm dia 2 mm thick PVC conduit recessed surface conduiting system including the cost of cutting / making good chases in brick work and including the cost of supplying and fixing modular grid plate mounted 220volt 16amp. 6 pin combined shuttered socket outlets along with 220 volt 16 amp. controlled switch of housed in zinc chromate passivated MS boxes and including the cost of loop earthing with 2.5 sq. mm. FRLS PVC insulated 660/1100 volt grade stranded copper conductor wires complete as per specifications and as required.	Set	16		
6	Point wiring for two way switch controlled light points with 3x2.5 sq. mm. (P+N+E) FRLS PVC insulated 1100 volt grade stranded copper conductor wires in IS 25mm dia 1.6 mm thick PVC conduit recessed and / or surface conduiting system including the cost of cutting / making good chases in brick work and including the cost of supplying and fixing modular grid plate mounted 240volt 6Amp. control switch housed zinc chromate passivated MS boxes with moulded cover plate and including the cost of loop earthing with 2.5 sq. mm. FRLS PVC insulated 660/1100 volt grade stranded copper conductor wires complete as per specifications and as required.	Each	2		
7	Supplying and fixing heavy gauge ISI PVC recessed surface conduiting system including the cost of cutting/making good chases in brick work complete as per specification as required and as below.				
	a. 25mm 2mm thick	Meter	1500		
	b. 32mm 2mm thick	Meter	150		
8	Wiring for circuit/submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor single core cable in surface/recessed medium class PVC Conduit as required.				
a.	2x2.5sq.mm in 25mm 2 mm thick PVC conduit conduit and 1 No. 2.5sq.mm. FRLS PVC insulated stranded copper conductor 660/1100 volt grade wires for earthing.	Meter	1250.00		

S.NO.	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
b.	2x4.0 sq. mm in 25mm 2 mm thick PVC conduit conduit and 1 No. 2.5sq.mm. FRLS PVC insulated stranded copper conductor 660/1100 volt grade wires for earthing.	Meter	250.00		
c.	4x6sq.mm in 32mm 2 mm thick PVC conduit conduit and 2 Nos. 4sq.mm. FRLS PVC insulated stranded copper conductor 660/1100 volt grade wires for earthing.	Meter	50.00		
d.	4x10sq.mm in 32mm 2 mm thick PVC conduit conduit and 2 Nos. 6sq.mm. FRLS PVC insulated stranded copper conductor 660/1100 volt grade wires for earthing.	Meter	75.00		
e.	4x16sq.mm in 40mm 2 mm thick PVC conduit conduit and 2 Nos. 10sq.mm. FRLS PVC insulated stranded copper conductor 660/1100 volt grade wires for earthing.	Meter	75.00		
9	Point wiring for 20/25 amp socket outlet points (1 outlet wired on 1 circuit) with 3x4 sq.mm. (P+N+E) FRLS PVC insulated 1100 volt grade stranded copper conductor wires in IS 25mmdia 1.6 mm thick PVC conduit recessed or surface conduiting system including the cost of cutting / making good chases in brick work and including the cost of supplying and fixing modular grid plate mounted 220volt 20/25amp. 3pin combined shuttered socket outlets alongwith 220 volt 20/25 amp.controlled switch of housed in zinc chromate passivated MS boxes and including the cost of loop earthing with 2.5 sq.mm. FRLS PVC insulated 660/1100 volt grade stranded copper conductor wires complete as per specifications and as required.	Each	15		
10	Supplying and fixing suitable size of 8x3 box with modular plate and cover in front on surface or in recess, including providing and fixing 2nos. 3 pin 6 amps socket outlet and 2nos. 6 amps modular switch ,including connection with 3x4sq mm FRLS PVC insulated copper conductor wire in surface / recess PVC conduit complete as required. - 4 Sets per circuit (UPS Points For Workstations)	Each	20		
11	Supplying and fixing suitable size of 8x3 box with modular plate and cover in front on surface or in recess, including providing and fixing 2nos. 3 pin 6 amps socket outlet and 2nos. 6 amps modular switch ,including connection with 3x4sq mm FRLS PVC insulated copper conductor wire in surface / recess PVC conduit complete as required. - 3 Sets per circuit (UPS Points For Workstations)	Each	20		
12	Supplying and fixing suitable size of 8x3 box with modular plate and cover in front on surface or in recess, including providing and fixing 2nos. 3 pin 6 amps socket outlet and 2nos. 6 amps modular switch ,including connection with 3x4sq mm FRLS PVC insulated copper conductor wire in surface / recess PVC conduit complete as required. - 2 Sets per circuit (UPS Points For Workstations)	Each	25		
	SUB-HEAD I TOTA				
	SUB-HEAD II: SUPPLY OF LIGHTING FIXTURE AND FANS				

S.NO.	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
1	SITC 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, 2nos. canopies, shackle kit, safety rope, copper winding, Power Factor not less than 0.9, Service Value (CM/M/W) minimum 6.00, Air delivery minimum 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.				
	a) 1200 mm sweep	Each	114		
2	Supplying and fixing two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc.as required.	Each	114		
3	Supllying, Installation, Testing & commisioning of following type LED reccesed / surface mounted light fixture complete with PDC Aluminium housing for enhances heat dissipation along with driver with safety protections, PF>0.95 and should give minimum 100 lumens/Watt. Fixtures should be certified for mimimum of 70% lumens maintenance till 50,000 burning hours of usage, CRI ≥ 80, CCT should be 5700-6000 Kelvin or as specified by the architect in all aspects along with complete connections.				
	20W LED Tube Batten	Each	126		
	12W LED Downlighter	Each	76		
	10W LED Tube (2')	Each	2		
	15W LED Downlighter	Each	8		
	28W LED Panel 2'x2'	Each	62		
	28 Watt 4feet/8feet LED recessed linear light made of extruded alluminium, with flexibility of cascading for a seamless effect if required with Endcaps.	Each	5		
	15W/ Mtr 25-50mm LED Profile lighting system with trim, made of extruded aluminium or specified by the architect,	Meter	10		
4	Supplying of following size of exhaust fan complete with louver and bird guard screen with 3 core flexible wire as required.				
	b) 380 mm 1400 RPM	Each	4		
	SUB-HEAD II TOTAL:				
	SUB-HEAD III: INSTALLATION OF FIXTURES AND FANS				
1	Installation, Testing & Commissioning of following Recess / Surface mounted LED fixture with driver, earthing point etc. including the hanging arrangement/supports complete in all resspects as required.				
	20W LED Tube Batten	Each	126		
	12-15W LED Downlighter	Each	84		

S.NO.	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
	10W LED Tube (2')	Each	2		
	2'x2' LED Panel	Each	62		
	LED Linear Light	Each	5		
	LED Profile Light	Meter	10		
2	Installation, testing and commissioning of Ceiling fans (1200/1400mm) including down rods of required length, canopy, suspending shackle, bladed electronic regulator etc. complete as required.	Each	114		
3	Installation, testing and commissioning of 380mm dia exhaust fans including the cost of making hole in the wall making good, louvered shutter etc. complete as required.	Each	4		
	SUB-HEAD III TOTAL:				
	SUB-HEAD IV: DISTRIBUTION BOARDS				
1	Supply, installation, testing and commissioning of factory fabricated and factory assembled, sheet steel clad powder coated, wall / recess mounting dust and vermin (IP-42) ingress protection) proof double door vertical type Distribution Boards fabricated from 16 SWG sheet steel provided with hinged gasketed door with padlocking facility and including suitably rated PVC insulated copper busbars with interconnections and neutral bar assemblies one per earthing terminals assembly etc. complete as required and as below. sample to be got approved by architects (Note:- In all distribution boards / panels the control wiring shall be FRLS)				
a.	12WAY TPN DB with 1-63 amp. 4P 10 kA 30mA RCBO incoming with 36 nos. 6/16/25 amps. SP 10 kA 'C' category MCB with thermal magnetic protective releases out goings.	Each	1		
b.	8WAY TPN DB with 1-63 amp. 4P 10 kA 30mA RCBO incoming with 24 nos. 6/16/25 amps. SP 10 kA 'C' category MCB with thermal magnetic protective releases out goings.	Each	3		
c.	6WAY TPN DB with 1-63 amp. 4P 10 kA 30mA RCBO incoming with 18 nos. 6/16/25 amps. SP 10 kA 'C' category MCB with thermal magnetic protective releases out goings.	Each	2		
	SUB-HEAD IV TOTAL:				
	SUB-HEAD V: WIRING FOR TELEPHONE & DATA POINTS				
1	Wiring for telephone outlets with 2 pair .61 mm dia Cu wire in existing conduits complete as required and as below.	Meter	100		

S.NO.	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
3	Supply and fixing of a single telephone cord grid plate mounted outlet unit (RJ-11) with moulded cover plate in recessed zinc chromate passivated MS box complete as required.	Each	4		
4	Supply and fixing of the following sheet steel clad wall / recess mounting telephone tag block of Krone make constructed from 14 SWG sheet steel, finished with red oxide coating of two coats of paint, with hinged gasketed door and complete with adequately rated and sized telephone terminal block to receive incoming and outgoing wires.				
	5 pair	Each	1		
5	Supplying & fixing 75mm x 75mm x 10 mm zinc passivated box with mould cord outlet complete with RJ 45 sockets as required for computer data point.	Each	184		
6	Supplying & laying CAT 6 for LAN wiring in PVC conduit complete as required.	Mtrs	6500		
7	Supply , Installtion , Testing and comissioning of follwoing wall mounted rack with front sheet steel glass door, top & bottom cover with cable entry provision, fans , 2 cable managers , satationary shelf , 2 Nos of hardware pkts complete as required.				
	15U	Each	1		
	9U	Each	1		
8	Supply , Installtion , Testing and comissioning of loaded jack/patch panels for LAN cable termination complete as required.				
	48 Port	Each	3		
	24 Port	Each	2		
	8 Port	Each	1		
9	SITC of CAT6 UTP 23 AWG Patch Cord - 3 mtr complete as required.	Each	184		
10	Supplying and fixing powder coated MS raceways junction boxes on surface of walls / ceiling and or recessed in walls/ floors fabricated from 1.6 mm thick MS sheets provided with neoprene gasketed removable cover fixed on the boxes by countersunk cadmium plated screws at intervals of max. 300 mm including the cost of earth links at all joints to ensure earth continuity and including the cost of powder coating as per colour to be approved complete as per specifications as required and as below:				
	150 mm wide x 50 mm deep	Each	5		
	SUB-HEAD V TOTAL:				
	SUB-HEAD VI : CCTV - IP Based (INTEGRATION WITH EXISTING)				
	(Electrical Contractor check the existing PA system and than to do the integration / addition of these new PA speakers to the existing PA system in the block with all the required equipments, accessories etc.)				

S.NO.	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
	SITC of the following Digital CCTV System including outlet boxes, cover plates and all necessary connections complete with operation, testing and commissioning works.				
1	Supply installation Testing and Commissioning of Indoor 4 megapixel wide angle POE compliant IP dome camera with 3.6mm built-in fixed lens with minimum illumination of 0.1 lux F1.2 50IRE with IR LEDs with SSDR, SSNR and ICR for making it true day & night camera with intelligent motion detection and occlusion detection.	Each	10		
2	Supply installation Testing and Commissioning of Indoor 4 megapixel wide angle POE compliant IP Bullet camera with 3.6mm built-in fixed lens with minimum illumination of 0.1 lux F1.2 50IRE with IR LEDs with SSDR, SSNR and ICR for making it true day & night camera with intelligent motion detection and occlusion detection.	Each	34		
3	SITC of 64 channel NVR with recording bandwidth of 64Mbps having capability to support live video of 4megapixel cameras at 30fps and recorded video cif to 8megapixel, playback bandwidth of 32Mbps, alarm and event triggering with intelligent video analytics and motion detection with hard disk support capacity upto 4tb, USB, DVD-RW, Flexible search capabilities, Multi-event Recording. Storage of 15 Days recording	Each	1		
6	Supplying, Installation, Testing & Commissioning of 24 Port PoE Switch with 2 Nos. SFP Module complete as required	Each	2		
7	SITC of Internal SATA 4 Tb hard disk complete as required	Each	1		
8	SITC of 600VA UPS with 15mins back-up complete as required.	Each	1		
	SUB-HEAD VI TOTAL:				
	SUB-HEAD VII : PA SYSTEM (INTEGRATION WITH EXISTING SYSTEM)				
	(Electrical Contractor check the existing PA system and than to do the integration / addition of these new PA speakers to the existing PA system in the block with all the required equipments, accessories etc.)				
1	Supply,Installation,testing & commissioning of 6W, metal grille, ceiling/wall speaker complete as required.	Each	28		
2	Supply & laying in existing conduits, 2x1 sq. mm, insulated, polyethylene speaker cable including terminations, connections complete as required.	Meter	750		
	SUB-HEAD VII TOTAL:				

S.No.	DESCRIPTION OF ITEMS	QTY	UNIT	Rate	Amount
I	**FIRE FIGHTING SYSTEM AND HYDRANT SYSTEM**				
1.0	Providing, laying,jointing & testing of following size of pipes conforming to IS: 1239 part-1/1974 and part 11/1979 with all accessories like Foregd fitting with thired /welded joint shall be used like tees, elbows, reducers, flanges, rubber gaskets, gi nuts, bolts, washers and fixing the pipe on floor/wall//ceiling with suitable size clamps, hangers and M.S.pipe sleeves to be provided wherever the pipes are crossing the walls/floor and sealing the sleeves with fire proof material including cutting, holes and chases in brick, R.C.C. work and making good the same to original conditions complete in all respects				
	M.S. Pipe Class-"C"				
a	25mm dia.	15.00	Metre		
b	80mm dia.	12.00	Metre		
c	100mm dia.	150.00	Metre		
2.0	Painting for M.S. pipe with a coat of red oxide primer and two or more coats of synthetic enamel paint of approved colour and Quality to give an even shade including surface preparation.				
a	25 mm dia	15.00	Meter		
b	80 mm dia	12.00	Meter		
c	100 mm dia	130.00	Meter		
3.0	Providing and applying one coat of 4 mm thick 'PYPKOTE' or COATEK anti rust pipe protection including approved primer as per manufacturers specifications and lap of 25 mm to make an impermeable layer on MS pipes in trenches or on structural/masonary members complete including surface preparation				
a	100 mm dia	20.00	Meter		
4.0	Supplying and fixing **Stainless Steel -IS:3444 Grade-1** single headed internal/ external hydrant valve with instantaneous **Stainless Steel** couplings of 63 mm dia with cast iron wheel ISI marked conforming to IS 5290 (Type - A) with ABS blank cap and chain as required.	10	Each		
5.0	Supplying and fixing 63 mm dia, 15 mtr. long **Aqua RRL** hose pipe with 63 mm dia Male and Female **Stainless Steel-IS:3444 Grade-1** couplings duly binded with GI wire, rivets etc. conforming to IS 636 /903 (Type -A) as required.	20	Each		
6.0	Supplying and fixing First-Aid Hose Reel Drum with MS construction spray painted in Post office Red, conforming to IS 884 with upto date amendments, complete with the following as required.				
a	30 m. long 20 mm (nominal internal) dia water hose rubber as per IS: 444 marked.				
b	20 mm (nominal internal) dia gun metal globe valve & nozzle.				
c	Drum and brackets for fixing the equipment on wall.				
d	Connections from riser with 25 mm dia stop valve (gun metal) & M.S. Pipe.	10	Set		
7.0	Supplying & fixing 63 mm dia **Stainless Steel IS: 3444 Grade-1** branch pipe with 20 mm (nominal internal diameter) size S.S nozzle conforming to IS 903, suitable for instantaneous connection to interconnect hose pipe coupling as required.	10	Each		
8.0	Supplying and fixing of hose cabinet shutter of size 900 mm x 2100 mm, door frame made of 2 mm thick Aluminum and 75x50mm **Section with 5 mm thick** glazed glass doors i/c 'necessary locking arrangement , as required.Powder coted of P.O. Red color Internal & External Finished.	10	Each		

S.No.	DESCRIPTION OF ITEMS	QTY	UNIT	Rate	Amount
9.0	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.				
a	80mm dia	1	Each		
b	100mm dia	2	Each		
10.0	Supplying, fixing, testing and commissioning of C.I. butterfly valve PN 1.6, with Bronze seat duly ISI marked complete with Nuts, Bolts, washers, gaskets, conforming to IS 13095 of following sizes as required.				
a	80mm dia	4	Each		
b	100mm dia	4	Each		
11.0	Providing and fixing brass ball valve (full bore type) with plastic coated lever and screwed female ends tested to 20 Kg/ cm2 of approved quality as specified.**(Make-Sant /AIP)**				
a	25 mm dia	1	Each		
12.0	Providing and fixing M.S. structural work fabricated from standard sections, (MS rounds, angles, channels etc.) including cutting to size,drilling welding including cost of (Hilti) fasteners, clamp in RCC structural members as directed, including two or more coats of synthetic enamel paint over one coat of primer after surface preperation including cutting and making good walls.	50.00	KG.		
13.0	Supplying and fixing 2 Way FBC of CI body with 2 No. Gun Metal male instantaneous inlet couplings complete with cap and chain as required. For 100 mm dia M.S. Pipe connection conforming to IS : 904 as required.	2	Each		
14.0	Providing and fixing gunmetal single acting air release valve with screwed inlet 25 mm dia.	2	Each		
15.0	Providing and fixing pressure switch with suitable for 1-10 Kg/cm2 including electrical connections setting of Cut-In and cut-Off pressure complete in all respects.	1	Each		
16.0	Excavating trenches of required width for pipes, cables etc. including excavation for sockets and dressing of sides, ramming of bottom depth upto 1.5 M including getting out the excavated soil and then returning the soil as required in layers not exceeding 20 cms in depth including filling jamuna sand alround, consolidating each deposited layer by ramming, watering etc. and disposing of surplus excavated soil outside the site.				
a	Pipes, cables etc. Exceeding 80 dia but not exceeding 150 mm dia.	20.00	Meter		
17.0	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	20000.00	Ltrs		
	TOTAL OF FIRE FIGHTING SYSTEM AND HYDRANT SYSTEM				
II	**FIRE PUMPS AND ACCESSORIES**				
1.0	Supplying and fixing air vessel made of 200 mm dia, 8 mm thick MS sheet,1200 mm. height with air release valve on top and flanged connection to riser, drain arrangement with 25 mm dia Gun metal wheel valve, with required accessories, pressure gauge and painting with synthetic enamel paint of approved shade as required.	1	Each		

S.No.	DESCRIPTION OF ITEMS	QTY	UNIT	Rate	Amount
2.0	Supply, installation, testing and commissioning of pressure guage 0-200 PSI (0 - 14 Kg) range, 3/8" BSP bottom entry, 4" dial weather proof with stainless steel internals, siphon tube amd ball valve including fittings, etc. complete as required	1	Each		
3.0	Providing and fixing dust & vermin proof cubicle type motor control centre fabricated from powder coated 16 SWG MS sheet for ELECTRICAL PANEL FOR TERRACE PUMP suitable for Terrace fire Pump and automatic/Menual operation complete in all respect as required.				
	Electric panel board comprising of DOL starter auxiliary switch, main in commer, three phase preventer, voltmeter indication lamps, pressure gauge M.C.B.20amp.	1	Set		
	Rating including all connections with copper cable etc.				
	(To start the terrace pumps)				
4.0	**Terrace Fire Pump**				
	Providing fixing multi stage horizontal centrifugal pump with volute bronze impeller connected to TEFC induction motor suitable for 400/410 Volts, 3 Phase, 50 Cycles, AC Supply with the following specifications:				
	Capacity : 450 LPM b. Head : 35 m				
	HP : As required. d. RPM : 2900				
	Mover : Electric Motor driven				
	Material of Construction:				
	Shaft & Sleeve : S.S. 410				
	Impeller : Bronze				
	Bearing : Grease lubricated				
	Seal - Mechanical seal.	1	Each		
	Pump foundation as per manufacturer.				
5.0	Providing and fixing resilient rubber lined neoprene single arch vibration eliminators with unit control suitable for fire pump upto 45^0 C. Temperature working pressure 20 Kg. per square centimeter .				
a	80 mm dia	1	Each		
b	100 mm dia	1	Each		
6.0	Providing and fixing heavy duty PVC insulated, PVC armoured aluminium conductor cables 1100V grade including necessary support clamps and connection lugs complete in all respects.				
a	Power cable 3.5 core 70sqmm.	25.00	Meter		
	Total Fire Pumps & Accessories				
III	**HAND APPLIANCES**				
1.0	Supply & Fixing ISI marked (IS:15683) Portable Fire Exitnguisher, ABC type capacity 6 kg, finished externally with red enamel paint, complete in all respects including initial fill and wall suspension. **Capacity 6 kg**	10	Each		
2.0	Supply & Fixing ISI marked (IS:15683) Portable fire Extinguisher, Carbon-dioxide type flat base including valve, discharge hose of not less than 10 mm dia. min. 600 mm long & complete in all respects including initial fill with C02 gas confirming to IS:307-1966 filled to a filling ratio of not more than 0.667and wall suspension bracket. **Capacity 4.5 Kg**	15	Each		

S.No.	DESCRIPTION OF ITEMS	QTY	UNIT	Rate	Amount
3.0	Supply & Fixing ISI marked (IS:15683) Portable Fire Extinguisher,Trolley mounted Mech. Foam type capacity 09 ltrs with gun-metal cap and nozzle and complete respects in all respects including initial fill and wall suspension. **Capacity 9.0 ltrs**	5	Each		
	Total of Hand Appliances				
	Summary				
I	**Fire Hydrant & Down Comer System**				
II	**Fire Pumps & Accessories**				
III	**Hand Appliances**				
	Total				

MAYOOR SCHOOL

Primary Block Extension

TENDER FOR

CIVIL, ELECTRICAL and FIRE FIGHTING WORKS

VOLUME – III: DRAWINGS

CLIENT

MAYOOR SCHOOL, AJMER

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MAYOOR SCHOOL CAMPUS

SECOND FLOOR PLAN

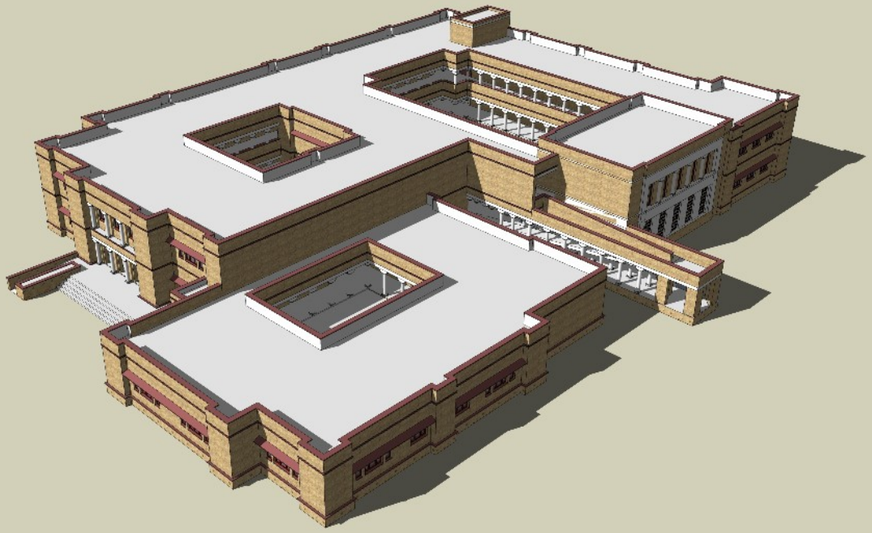
PRIMARY SCHOOL

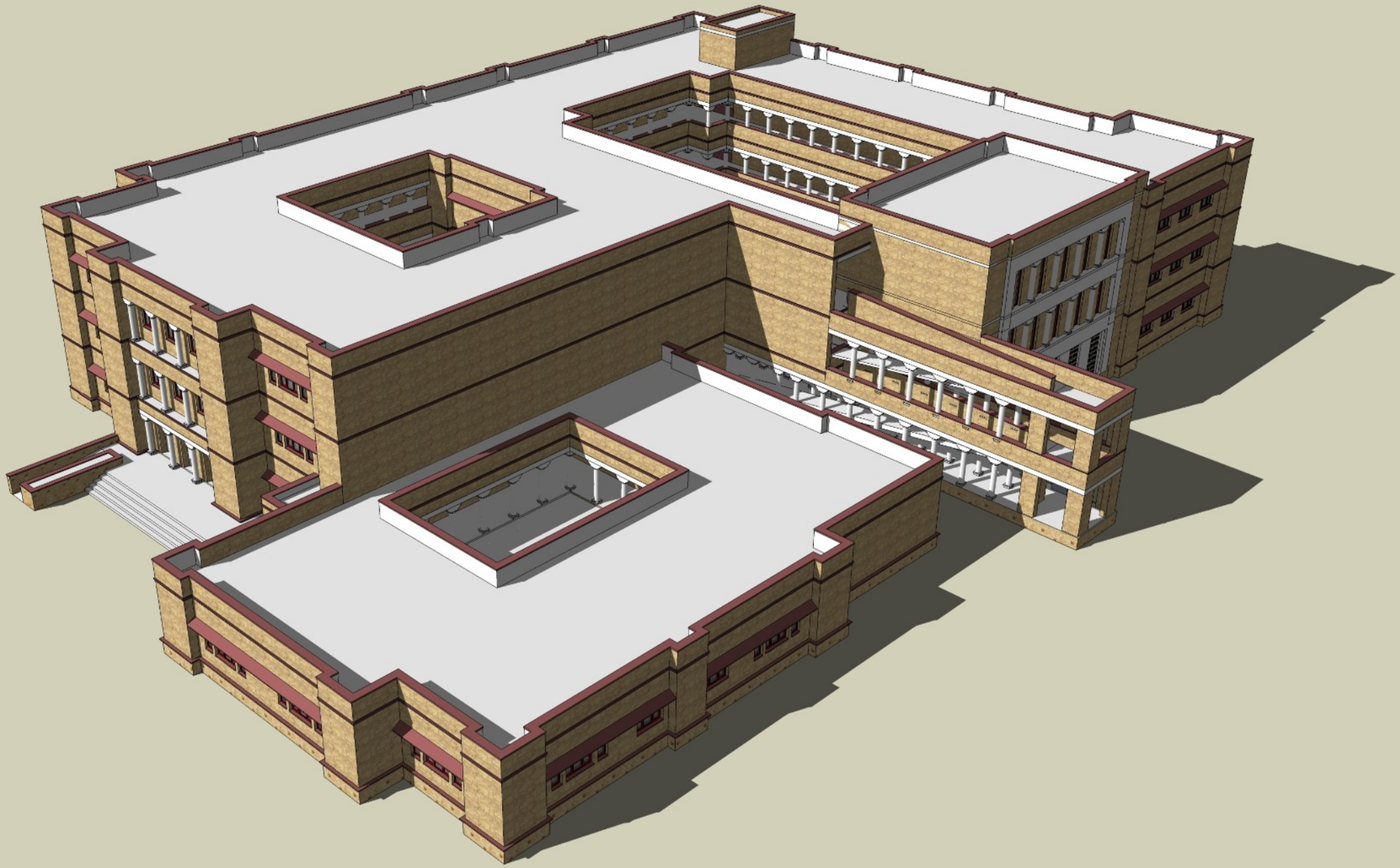
PROJ:	Myr_PS
R0	22-04-25
SCALE:	

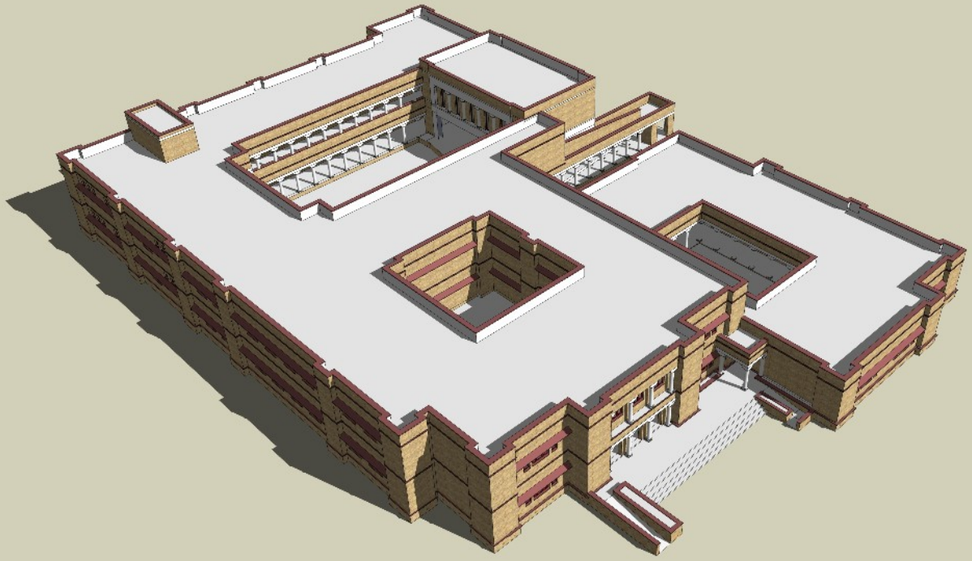
SHEET
AP
3.1

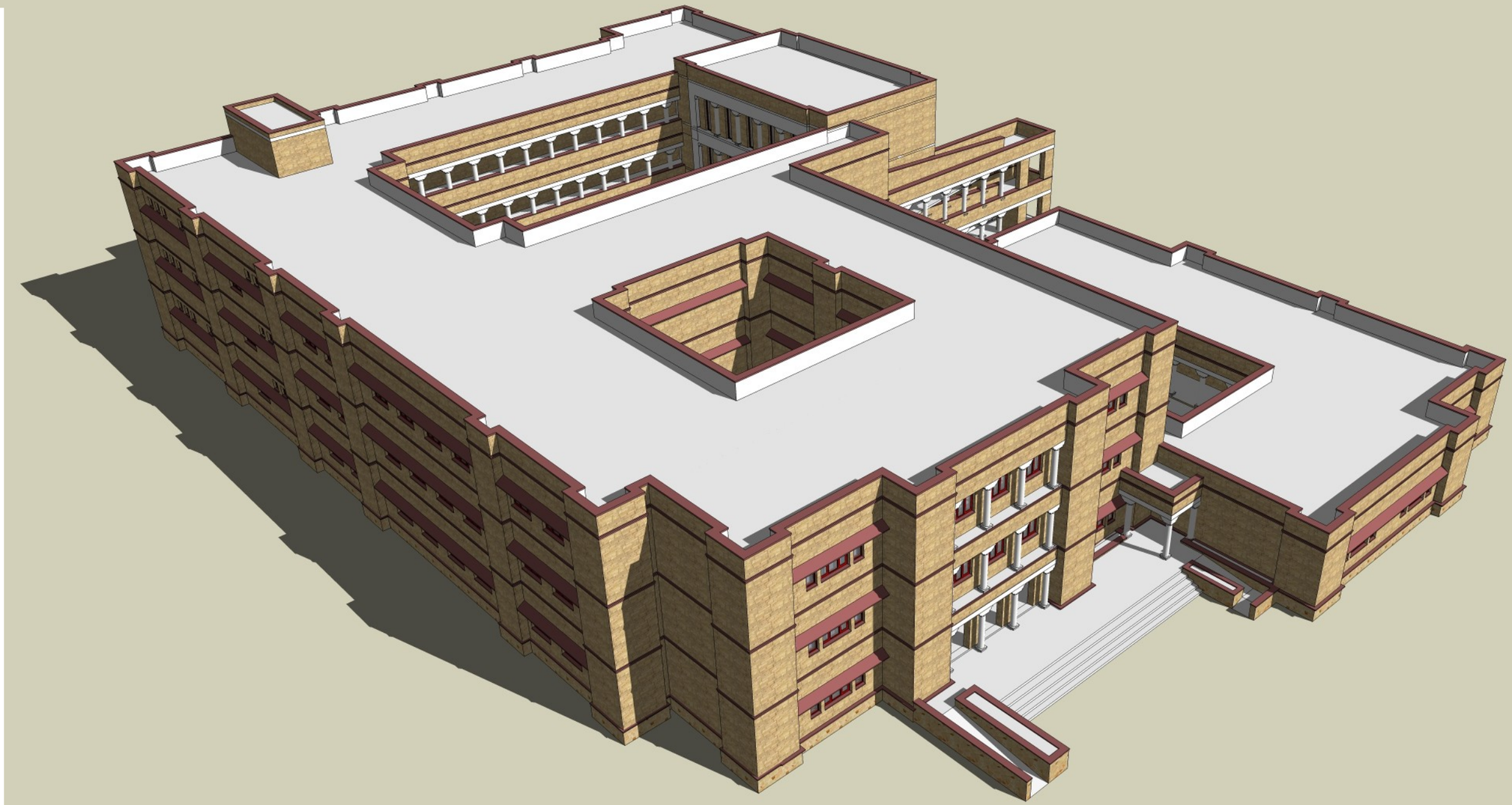

PRIMARY SCHOOL
PRE-PRIMARY SCHOOL

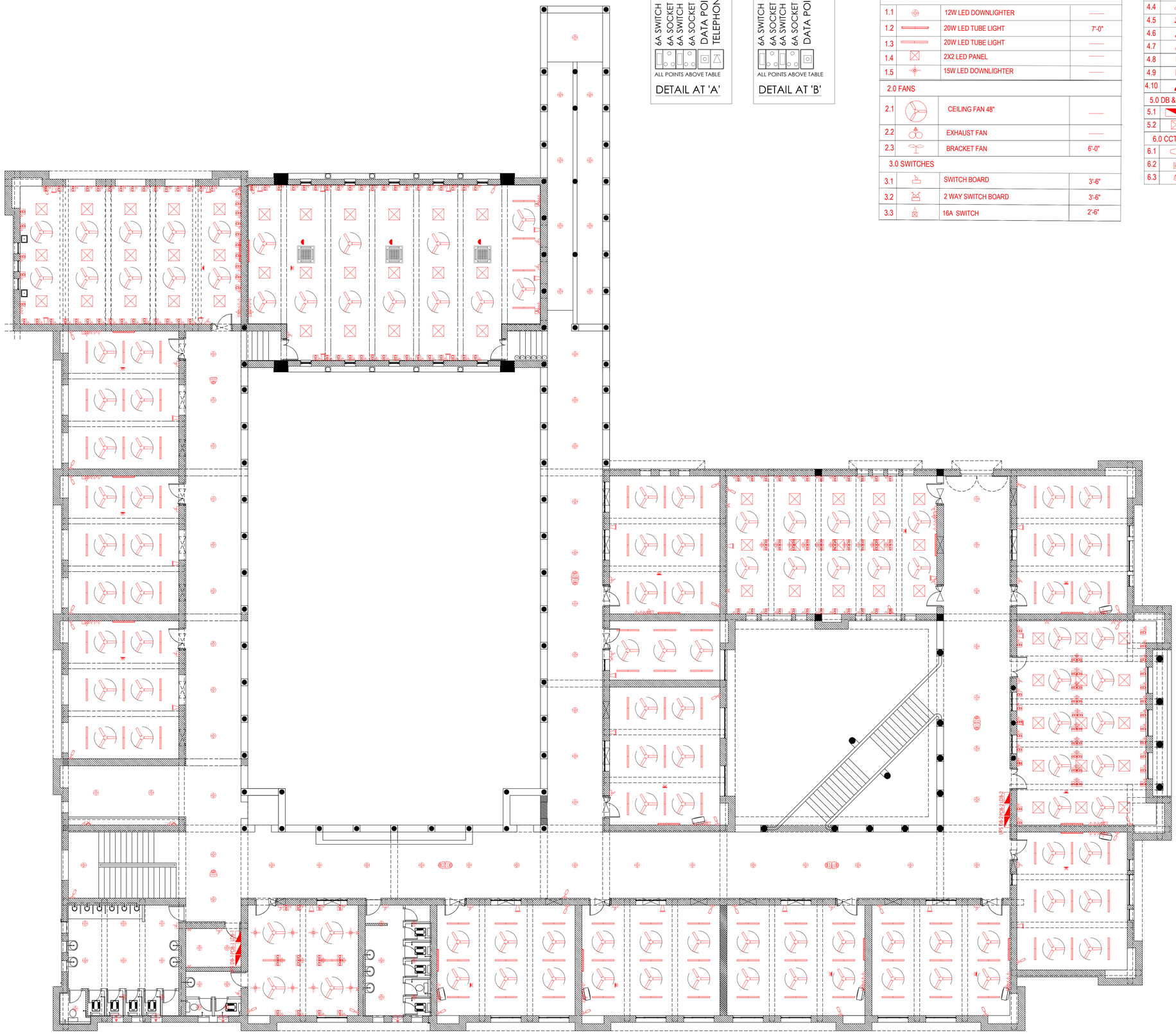

PRIMARY SCHOOL
PRE-PRIMARY SCHOOL











6A SWITCH
6A SOCKET
6A SWITCH
6A SOCKET
DATA POINT
TELEPHONE

ALL POINTS ABOVE TABLE

DETAIL AT 'A'

6A SWITCH
6A SOCKET
6A SWITCH
6A SOCKET
DATA POINT

ALL POINTS ABOVE TABLE

DETAIL AT 'B'

DETAIL OF LIGHT FIXTURE & MISC ITEMS

LEGEND	DESCRIPTION	HEIGHT(mm) FFL
1.0 LIGHT FIXTURE		
1.1	12W LED DOWNLIGHTER	——
1.2	20W LED TUBE LIGHT	7'-0"
1.3	20W LED TUBE LIGHT	——
1.4	2X2 LED PANEL	——
1.5	15W LED DOWNLIGHTER	——
2.0 FANS		
2.1	CEILING FAN 48"	——
2.2	EXHAUST FAN	——
2.3	BRACKET FAN	6'-0"
3.0 SWITCHES		
3.1	SWITCH BOARD	3'-6"
3.2	2 WAY SWITCH BOARD	3'-6"
3.3	16A SWITCH	2'-6"

4.0 RECEPTACLES		
4.1	6A 3PIN SOCKET WITH SWITCH	2'-6"
4.2	16A 6PIN SOCKET WITH SWITCH	2'-6"
4.3	DATA POINT	2'-6"
4.4	6A 3 PIN SOCKET WITH SWITCH	3'-6"
4.5	16A 6PIN SOCKET	AT FLOOR LVL
4.6	16A 6PIN SOCKET WITH SWITCH (DRINKING WATER)	4'-0"
4.7	6A 3 PIN SOCKET WITH SWITCH FOR RO	4'-0"
4.8	A DETAIL	2'-6"
4.9	B DETAIL	2'-6"
4.10	AC POINT	CEILING
5.0 DB & JB		
5.1 DB	DISTRIBUTION BOARD	5'-0"
5.2	FLOOR RACK	8'-0"
6.0 CCTV & SPEAKER		
6.1	WALL MOUNTED SPEAKER OUTLET	7'-6"
6.2	WALL MOUNTED CCTV OUTLET	7'-6"
6.3	CCTV CAMERA (DOME)	——

Vinyās
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MAYOOR SCHOOL
PRIMARY BLOCK

SECOND FLOOR
ELECTRICAL LAYOUT
TENDER PURPOSE

PROJ:	Myr-SS4
R0	27-04-25
SCALE:	1" = 30'-0"
DWN. BY.-	SUMAN
CHKD BY.-	T.SINGH

CONSULTANT
GIAN CONSULTANCY SERVICES
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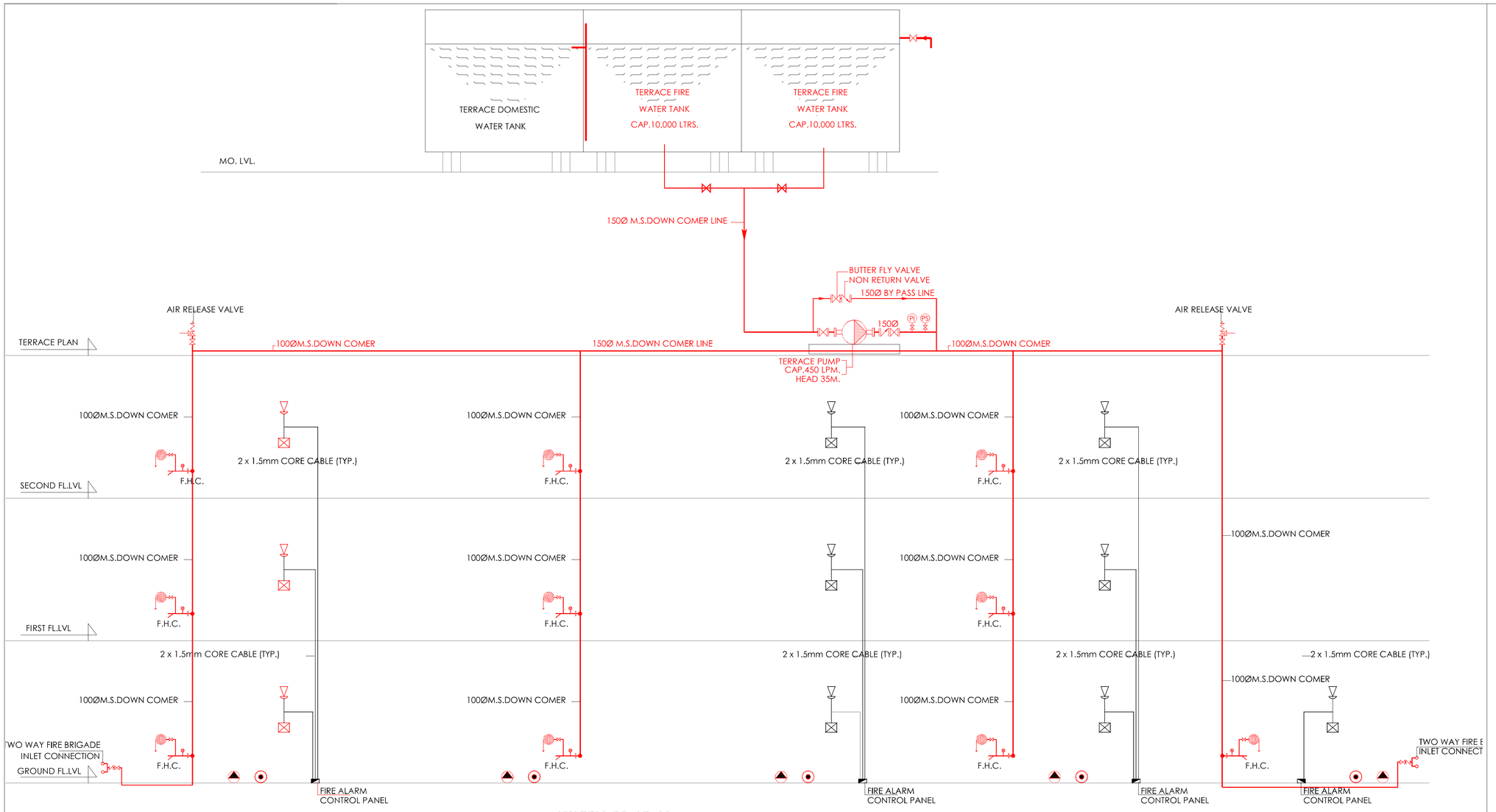
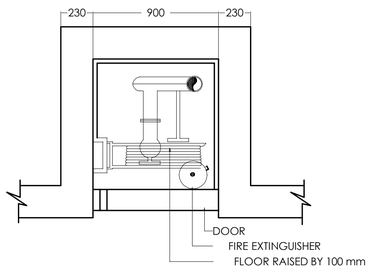
E-mail : gian.consultancy@gmail.com
gian@gianconsultancy.com

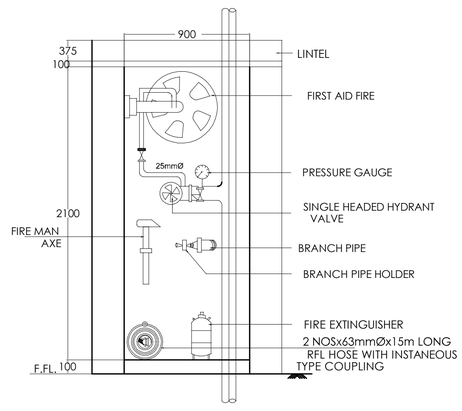
SHEET
EL
1.1



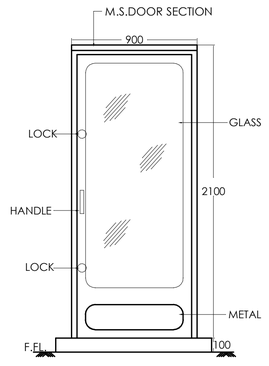
SYSTEM DIAGRAM
FIRE FIGHTING SYSTEM



PLAN



ELEVATION



M.S. PLATE POWDER COATED FINISHING
INTERNAL & EXTERNAL

FRONT VIEW

LEGEND

SYMBOL	DESCRIPTION
	BUTTER FLY VALVE
	NON RETURN VALVE
FHC	FIRE HOSE CABINET WITH LANDING VALVE HOSE REEL, 2NOS HOSE PIPE & BRANCH PIPE
	9 KgABC DRAY POWDER TYPE FIRE EXTINGUISHER
	4.5 KG. CAPACITY CO2 TYPE FIRE EXTINGUISHER
	MANUAL CALL BOX
	HOOTER
	FIRE ALARM MAIN CONTROL PANEL
	TWO WAY FIRE BRIGADE INLET CONNECTION

FIRE NOTES

NOTE :- AS PER NATIONAL BUILDING CODE OF INDIA PART-4, FIRE AND LIFE SAFETY REVISED 2016

TYPE-OF BUILDING

EDUCATIONAL BULIDING (B)

LESS THAN 15M IN HEIGHT GROUND PLUS ONE OR MORE STOREYS

1. FIRE EXTINGUISHER
   - 4.5 Kg CO2
   - 9 Liters Cap. Water Co2
   - 6 Kg DRY POWDER TYPE)
2. HOSE REEL
3. DOWN COMER SYSTEM
4. MANUALLY OPERATED ELCETRIC FIRE ALARM SYSTEMS
5. OVER HEAD FIRE TANK CAP.=20,000 Ltrs BUILDING

F-1. TERRACE FIRE PUMP
CAP.=450Lpm
HEAD=35M

APPLICANT SIGNATURE :

ARCHITECT SIGNATURE :

PROJECT TITLE : -

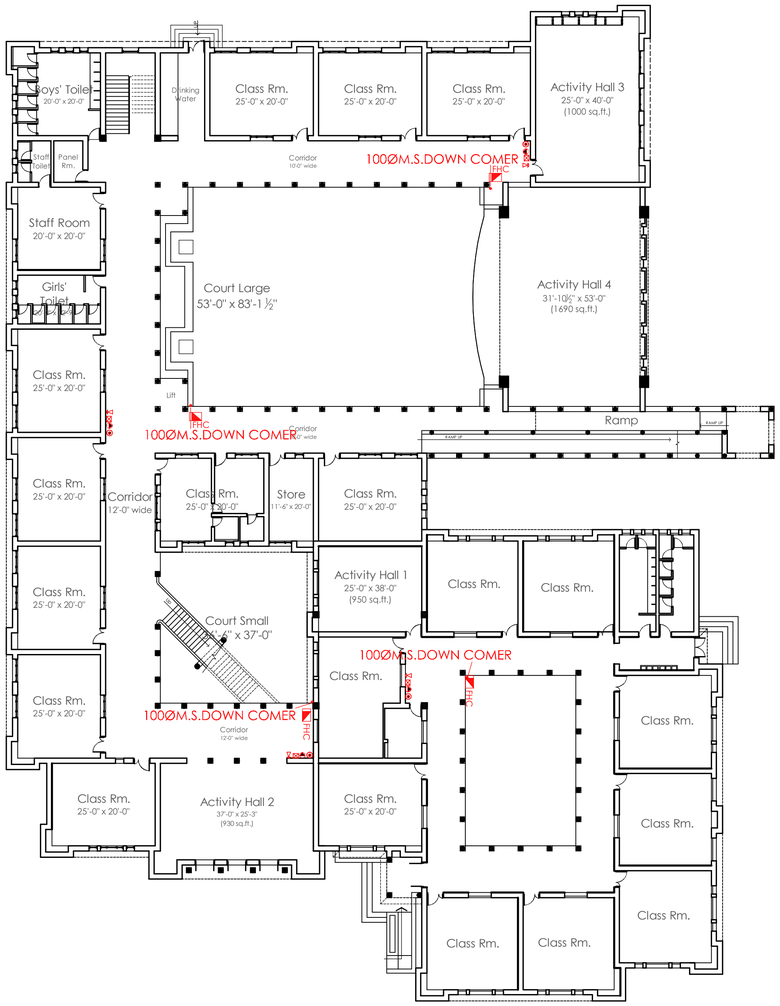
MAYOOR SCHOOL
PRIMARY BLOCK

DRAWING TITLE :

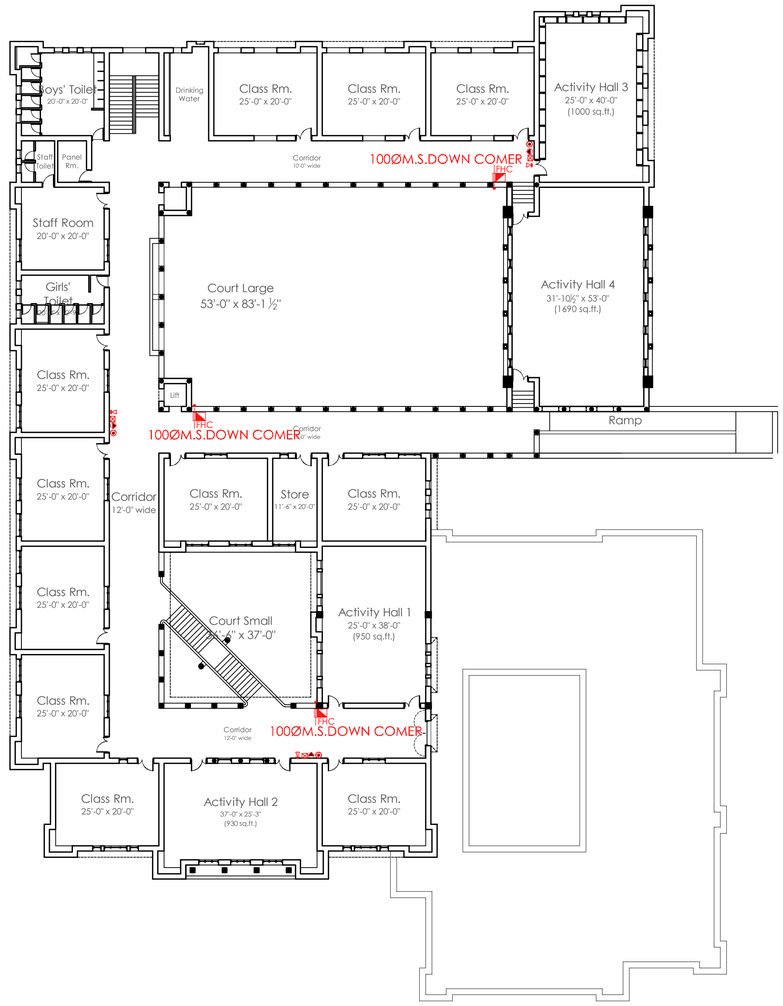
FIRE FIGHTING SYSTEM DIAGRAM

DATE : - R0-15/Apr/2025

SCALE : -	NORTH	SHEET NO :
N.T.S.		FF/SYS/01



GROUND FLOOR PLAN



FIRST FLOOR PLAN

LEGEND

SYMBOL	DESCRIPTION
	BUTTER FLY VALVE
	NON RETURN VALVE
FHC	FIRE HOSE CABINET WITH LANDING VALVE HOSE REEL, 2NOS HOSE PIPE & BRANCH PIPE
	9 KgABC DRAY POWDER TYPE FIRE EXTINGUISHER
	4.5 KG. CAPACITY CO2 TYPE FIRE EXTINGUISHER
	MANUAL CALL BOX
	HOOTER
	FIRE ALARM MAIN CONTROL PANEL
	TWO WAY FIRE BRIGADE INLET CONNECTION

FIRE NOTES

NOTE :- AS PER NATIONAL BUILDING CODE OF INDIA PART-4, FIRE AND LIFE SAFETY REVISED 2016

TYPE-OF BUILDING

EDUCATIONAL BULIDING (B)

LESS THAN 15M IN HEIGHT GROUND PLUS ONE OR MORE STOREYS

1. FIRE EXTINGUISHER
   - 4.5 Kg CO2
   - 9 Liters Cap. Water Co2
   - 6 Kg DRY POWDER TYPE)
2. HOSE REEL
3. DOWN COMER SYSTEM
4. MANUALLY OPERATED ELCETRIC FIRE ALARM SYSTEMS
5. OVER HEAD FIRE TANK CAP.=20,000 Ltrs BUILDING

F-1. TERRACE FIRE PUMP
CAP.=450Lpm
HEAD=35M

APPLICANT SIGNATURE :

ARCHITECT SIGNATURE :

PROJECT TITLE : -

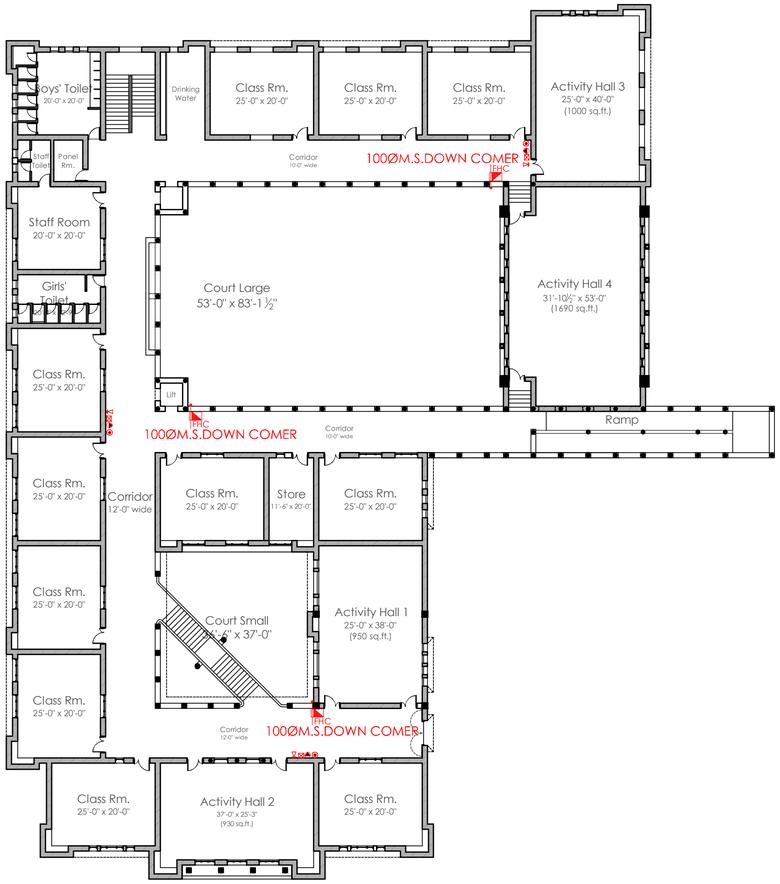
MAYOOR SCHOOL
PRIMARY BLOCK

DRAWING TITLE :

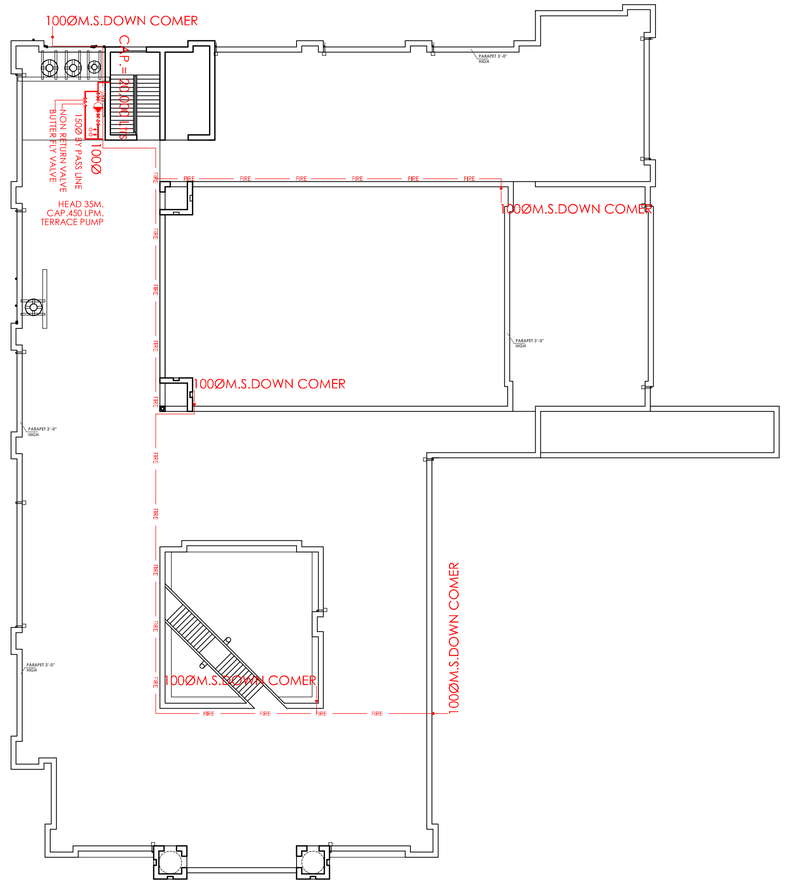
FIRE FIGHTING DRAWING

DATE : - R0-15/Apr/2025

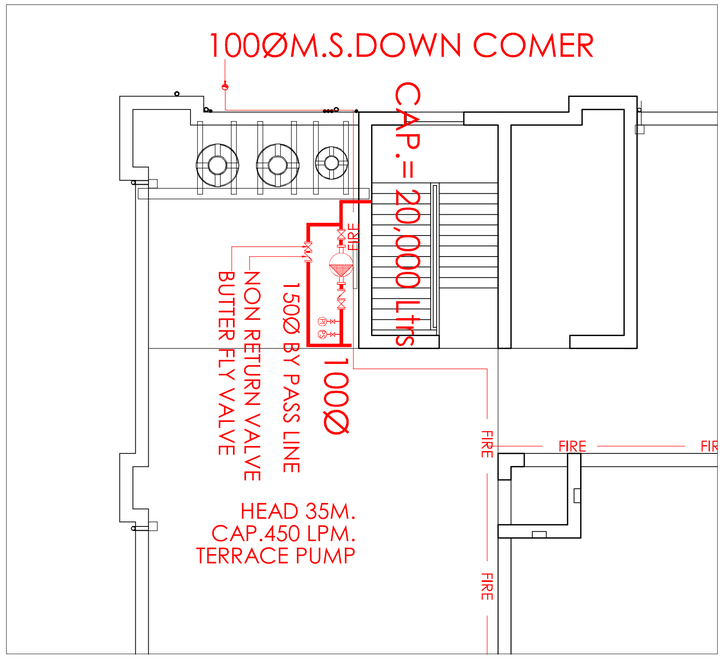
SCALE : -	NORTH	SHEET NO :
1 : 100		FF/SYS/02



SECOND FLOOR PLAN



TERRACE PLAN



PART DETAIL PLAN OF TERRACE PUMP

LEGEND

SYMBOL	DESCRIPTION
	BUTTER FLY VALVE
	NON RETURN VALVE
FHC	FIRE HOSE CABINET WITH LANDING VALVE HOSE REEL, 2NOS HOSE PIPE & BRANCH PIPE
	9 KgABC DRAY POWDER TYPE FIRE EXTINGUISHER
	4.5 KG. CAPACITY CO2 TYPE FIRE EXTINGUISHER
	MANUAL CALL BOX
	HOOTER
	FIRE ALARM MAIN CONTROL PANEL
	TWO WAY FIRE BRIGADE INLET CONNECTION

FIRE NOTES

NOTE :- AS PER NATIONAL BUILDING CODE OF INDIA PART-4, FIRE AND LIFE SAFETY REVISED 2016

TYPE-OF BUILDING

EDUCATIONAL BULIDING (B)

LESS THAN 15M IN HEIGHT GROUND PLUS ONE OR MORE STOREYS

1. FIRE EXTINGUISHER
   - 4.5 Kg CO2
   - 9 Liters Cap. Water Co2
   - 6 Kg DRY POWDER TYPE)
2. HOSE REEL
3. DOWN COMER SYSTEM
4. MANUALLY OPERATED ELCETRIC FIRE ALARM SYSTEMS
5. OVER HEAD FIRE TANK CAP.=20,000 Ltrs BUILDING

F-1. TERRACE FIRE PUMP
CAP.=450Lpm
HEAD=35M

APPLICANT SIGNATURE :

ARCHITECT SIGNATURE :

PROJECT TITLE : -

MAYOOR SCHOOL
PRIMARY BLOCK

DRAWING TITLE :

FIRE FIGHTING DRAWING

DATE : - R0-15/Apr/2025

SCALE : -	NORTH	SHEET NO :
1 : 100		FF/SYS/03