A GRADE SCHOOL BUILDING

By

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Approved by:

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Department of Architecture.

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INTRODUCTION

A GRADE SCHOOL BUILDING.

There has been a great demand in the present day of Education for model School Buildings, that is, school buildings in which there is an adequate arrangement of the different departments. So it has been my endeavor in this Thesis, to Design such a building of the Grade School Type, which not only is a model unit in itself, but which may be added to and still keep its efficiency.

The building is Scholastic Gothic in Style which is exclusively a shool style.

The plan is so designed as to form a letter "T". The building may be entered from any one of three entrances. The Main Entrance in the front for the Teachers and visitors and the two side entrances for the pupils.

Upon entering the School from the main entrance you come into a Corridor, which extends the whole length of the school. Six Class Rooms, an Auditorium of 600 seating capacity, the Teachers' Rest Room and the Principal's office are entered from the corridor on the first floor. At each end of the corridor are the main stairways to the basement and second floor.

On the second floor there is a corridor identical to the one on the first floor, with six Class Rooms, Teachers' Rest Room, Nurse's room and Library grouped along its sides.

The Class Rooms are ample in size 27'-0" x 32'-0" with a

seating capacity of 42, five large windows on one side of the room, with blackboards on the three other walls. There is a separate Cloak Room of ample proportions connected with every Class Room. In each room there is a built in Supply Cabinet very useful and seldom afforded in the present day Schools.

In the Basement on one side of the Boiler Room is the Boys Basement including the Boys Toilet, Gymnasium and Manual Training Room, all equipped with the most modern fixtures and equipment. On the other side of the Boiler Room is the Girls Basement which included the Girls Toilet, Gymnasium and Domestic Science Room.

The Heating & Ventilating system to be used in this building is of the Plenum Forced Air System, which has been used very successfully in all of the larger buildings of the present day.

INDEX FOR GRADE SCHOOL BUILDING

GENERAL SPECIFICATIONS.

GENERAL CONDITIONS OF CONTRACT, Pages 1 to 9 inclusive.

THE GENERAL CONDITIONS OF THE CONTRACT

Standard Form of the American Institute of Architects

The Standard Documents have received the approval of the National Association of Builders' Exchanges, the National Association of Master Plumbers, the National Association of Sheet Metal Contractors of the United States, the National Electrical Contractors' Association of the United States, the National Association of Marble Dealers, the Building Granite Quarries Association, the Building Trades Employers' Association of the City of New York, and the Heating and Piping Contractors National Association.

Index to the Articles of the General Conditions.

Article 1. Principles and Definitions.—

(a) The Contract Documents consist of the Agreement, the General Conditions of the Contract, the Drawings and Specifications, including all modifications thereof incorporated in the documents before their execution. These form the Contract.

(b) The Owner, the Contractor and the Architect are those named as such in the Agreement. They are treated throughout the Contract Documents as if each were of the singular number and masculine gender.

(c) The term Subcontractor, as employed herein, includes only those having a direct contract with the Contractor and it includes one who furnishes material worked to a special design according to the plans or specifications of this work, but does not include one who merely furnishes material not so worked.

(d) Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered mail to the last business address known to him who gives the notice.

(e) The term "work" of the Contractor or Subcontractor includes labor or materials or both.

(f) All time limits stated in the Contract Documents are of the essence of the contract.

(g) The law of the place of building shall govern the construction of this contract.

Art. 2. Execution, Correlation and Intent of Documents.—The Contract Documents shall be signed in duplicate by the Owner and Contractor. In case of failure to sign the General Conditions, Drawings or Specifications the Architect shall identify them.

The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intention of the documents is to include all labor and materials reasonably necessary for the proper execution of the work. It is not intended, however, that materials or work not covered by or properly inferable from any heading, branch, class or trade of the specifications shall be supplied unless distinctly so noted on the drawings. Materials or work described in words which so applied have a well known technical or trade meaning shall be held to refer to such recognized standards.

Art. 3. Detail Drawings and Instructions.—The Architect shall furnish, with reasonable promptness, additional instructions, by means of drawings or otherwise, necessary for the proper

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execution of the work. All such drawings and instructions shall be consistent with the Contract Documents, true developments thereof, and reasonably inferable therefrom. The work shall be executed in conformity therewith and the Contractor shall do no work without proper drawings and instructions. In giving such additional instructions, the Architect shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the building.

The Contractor and the Architect, if either so requests, shall jointly prepare a schedule, subject to change from time to time in accordance with the progress of the work, fixing the dates at which the various detail drawings will be required, and the Architect shall furnish them in accordance with that schedule. Under like conditions, a schedule shall be prepared, fixing the dates for the submission of shop drawings, for the beginning of manufacture and installation of materials and for the completion of the various parts of the work.

Art. 4. Copies Furnished.—Unless otherwise provided in the Contract Documents the Architect will furnish to the Contractor, free of charge, all copies of drawings and specifications reasonably necessary for the execution of the work.

Art. 5. Shop Drawings.—The Contractor shall submit, with such promptness as to cause no delay in his own work or in that of any other contractor, two copies of all shop or setting drawings and schedules required for the work of the various trades and the Architect shall pass upon them with reasonable promptness. The Contractor shall make any corrections required by the Architect, file with him two corrected copies and furnish such other copies as may be needed. The Architect's approval of such drawings or schedules shall not relieve the Contractor from responsibility for deviations from drawings or specifications, unless he has in writing called the Architect's attention to such deviations at the time of submission, nor shall it relieve him from responsibility for errors of any sort in shop drawings or schedules.

Art. 6. Drawings and Specifications on the Work.—The Contractor shall keep one copy of all drawings and specifications on the work, in good order, available to the Architect and to his representatives.

Art. 7. Ownership of Drawings and Models.—All drawings, specifications and copies thereof furnished by the Architect are his property. They are not to be used on other work and, with the exception of the signed contract set, are to be returned to him on request, at the completion of the work. All models are the property of the Owner.

Art. 8. Samples.—The Contractor shall furnish for approval all samples as directed. The work shall be in accordance with approved samples.

Art. 9. The Architect's Status.—The Architect shall have general supervision and direction of the work. He is the agent of the Owner only to the extent provided in the Contract Documents and when in special instances he is authorized by the Owner so to act, and in such instances he shall, upon request, show the Contractor written authority. He has authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract.

As the Architect is, in the first instance, the interpreter of the conditions of the Contract and the judge of its performance, he shall side neither with the Owner nor with the Contractor, but shall use his powers under the contract to enforce its faithful performance by both.

In case of the termination of the employment of the Architect, the Owner shall appoint a capable and reputable Architect, whose status under the contract shall be that of the former Architect.

Art. 10. The Architect's Decisions.—The Architect shall, within a reasonable time, make decisions on all claims of the Owner or Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

The Architect's decisions, in matters relating to artistic effect, shall be final, if within the terms of the Contract Documents.

Except as above or as otherwise expressly provided in these General Conditions or in the specifications, all the Architect's decisions are subject to arbitration.

Art. 11. Foreman, Supervision.—The Contractor shall keep on his work, during its progress, a competent foreman and any necessary assistants, all satisfactory to the Architect. The foreman shall not be changed except with the consent of the Architect, unless the foreman proves to be unsatisfactory to the Contractor and ceases to be in his employ. The foreman shall

represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor. Important directions shall be confirmed in writing to the Contractor. Other directions shall be so confirmed on written request in each case.

The Contractor shall give efficient supervision to the work, using his best skill and attention. He shall carefully study and compare all drawings, specifications and other instructions and shall at once report to the Architect any error, inconsistency or omission which he may discover.

Art. 12. Materials, Appliances, Employees.—Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light and power necessary for the execution of the work.

Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall not employ on the work any unfit person or anyone not skilled in the work assigned to him.

Art. 13. Inspection of Work.—The Owner, the Architect and their representatives shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection.

If the specifications, the Architect's instructions, laws, ordinances or any public authority require any work to be specially tested or approved, the Contractor shall give the Architect timely notice of its readiness for inspection, and if the inspection is by another authority than the Architect, of the date fixed for such inspection. Inspections by the Architect shall be promptly made. If any such work should be covered up without approval or consent of the Architect, it must, if required by the Architect, be uncovered for examination at the Contractor's expense.

Re-examination of questioned work may be ordered by the Architect. If such work be found in accordance with the contract, the Owner shall pay the cost of re-examination and replacement. If such work be found not in accordance with the contract, through the fault of the Contractor, the Contractor shall pay such cost, unless he shall show that the defect in the work was caused by another contractor, and in that event the Owner shall pay such cost.

Art. 14. Correction of Work Before Final Payment.—The Contractor shall promptly remove from the premises all materials condemned by the Architect as failing to conform to the Contract, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If the Contractor does not remove such condemned work and materials within a reasonable time, fixed by written notice, the Owner may remove them and may store the material at the expense of the Contractor. If the Contractor does not pay the expense of such removal within five days thereafter, the Owner may, upon ten days, written notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs and expenses that should have been borne by the Contractor.

Art. 15. Deductions for Uncorrected Work.—If the Architect and Owner deem it inexpedient to correct work injured or done not in accordance with the Contract, the difference in value together with a fair allowance for damage shall be deducted.

Art. 16. Correction of Work After Final Payment.—Neither the final certificate nor payment nor any provision in the Contract Documents shall relieve the Contractor of responsibility for faulty materials or workmanship and he shall remedy any defects due thereto and pay for any damage to other work resulting therefrom, which shall appear within a period of two years from the time of installation. The Owner shall give notice of observed defects with reasonable promptness. All questions arising under this Article shall be decided under Articles 10 and 45.

Art. 17. Protection of Work and Property.—The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from injury arising in connection with this Contract. He shall make good any such damage or injury, except such as may be directly due to errors in the Contract Documents. He shall adequately protect adjacent property as provided by law and the Contract Documents.

Art. 18. Emergencies.—In an emergency affecting the safety of life or of the structure or of adjoining property, not considered by the Contractor as within the provisions of Article 17, then the Contractor, without special instruction or authorization from the Architect or Owner, is

hereby permitted to act, at his discretion, to prevent such threatened loss or injury and he shall so act, without appeal, if so instructed or authorized. Any compensation claimed to be due to him therefor shall be determined under Articles 10 and 45 regardless of the limitations in Article 25 and in the second paragraph of Article 24.

Art. 19. Contractor's Liability Insurance.—The Contractor shall maintain such insurance as will protect him from claims under workmen's compensation acts and from any other claims for damages for personal injury, including death, which may arise from operations under this contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them. Certificates of such insurance shall be filed with the Owner, if he so require, and shall be subject to his approval for adequacy of protection.

Art. 20. Owner's Liability Insurance.—The Owner shall maintain such insurance as will protect him from his contingent liability for damages for personal injury, including death, which may arise from operations under this contract.

Art. 21. Fire Insurance.—The Owner shall effect and maintain fire insurance upon the entire structure on which the work of this contract is to be done and upon all materials, in or adjacent thereto and intended for use thereon, to at least eighty per cent of the insurable value thereof. The loss, if any, is to be made adjustable with and payable to the Owner as Trustee for whom it may concern.

All policies shall be open to inspection by the Contractor. If the Owner fails to show them on request or if he fails to effect or maintain insurance as above, the Contractor may insure his own interest and charge the cost thereof to the Owner. If the Contractor is damaged by failure of the Owner to maintain such insurance, he may recover under Art. 39.

If required in writing by any party in interest, the Owner as Trustee shall, upon the occurrence of loss, give bond for the proper performance of his duties. He shall deposit any money received from insurance in an account separate from all his other funds and he shall distribute it in accordance with such agreement as the parties in interest may reach, or under an award of arbitrators appointed, one by the Owner, another by joint action of the other parties in interest, all other procedure being in accordance with Art. 45. If after loss no special agreement is made, replacement of injured work shall be ordered under Art. 24.

The Trustee shall have power to adjust and settle any loss with the insurers unless one of the contractors interested shall object in writing within three working days of the occurrence of loss and thereupon arbitrators shall be chosen as above. The Trustee shall in that case make settlement with the insurers in accordance with the directions of such arbitrators, who shall also, if distribution by arbitration is required, direct such distribution.

Art. 22. Guaranty Bonds.—The Owner shall have the right to require the Contractor to furnish bond covering the faithful performance of the contract and the payment of all obligations arising thereunder, in such form as the Owner may prescribe and with such sureties as he may approve. If such bond is required by instructions given previous to the receipt of bids, the premium shall be paid by the Contractor; if subsequent thereto, it shall be paid by the Owner.

Art. 23. Cash Allowances.—The Contractor shall include in the contract sum all allowances named in the Contract Documents and shall cause the work so covered to be done by such contractors and for such sums as the Architect may direct, the contract sum being adjusted in conformity therewith. The Contractor declares that the contract sum includes such sums for expenses and profit on account of cash allowances as he deems proper. No demand for expenses or profit other than those included in the contract sum shall be allowed. The Contractor shall not be required to employ for any such work persons against whom he has a reasonable objection.

Art. 24. Changes in the Work.—The Owner, without invalidating the contract, may make changes by altering, adding to or deducting from the work, the contract sum being adjusted accordingly. All such work shall be executed under the conditions of the original contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

Except as provided in Articles 3, 9 and 18, no change shall be made unless in pursuance of a written order from the Owner signed or countersigned by the Architect, or a written order from the Architect stating that the Owner has authorized the change, and no claim for an addition to the contract sum shall be valid unless so ordered.

The value of any such change shall be determined in one or more of the following ways:

(a) By estimate and acceptance in a lump sum.
(b) By unit prices named in the contract or subsequently agreed upon.
(c) By cost and percentage or by cost and a fixed fee.
(d) If none of the above methods is agreed upon, the Contractor, provided he receive an order as above, shall proceed with the work, no appeal to arbitration being allowed from such order to proceed.

In cases (c) and (d), the Contractor shall keep and present in such form as the Architect may direct, a correct account of the net cost of labor and materials, together with vouchers. In any case, the Architect shall certify to the amount, including a reasonable profit, due to the Contractor. Pending final determination of value, payments on account of changes shall be made on the Architect's certificate.

Art. 25. Claims for Extras.—If the Contractor claims that any instructions, by drawings or otherwise, involve extra cost under this contract, he shall give the Architect written notice thereof before proceeding to execute the work and, in any event, within two weeks of receiving such instructions, and the procedure shall then be as provided in Art. 24. No such claim shall be valid unless so made.

Art. 26. Applications for Payments.—The Contractor shall submit to the Architect an application for each payment and, if required, receipts or other vouchers showing his payments for materials and labor, including payments to subcontractors as required by Article 44.

If payments are made on valuation of work done, such application shall be submitted at least ten days before each payment falls due, and, if required, the Contractor shall, before the first application, submit to the Architect a schedule of values of the various parts of the work, including quantities, aggregating the total sum of the contract, divided so as to facilitate payments to subcontractors in accordance with Article 44 (e), made out in such form and, if required, supported by such evidence as to its correctness, as the Architect may direct. This schedule, when approved by the Architect, shall be used as a basis for certificates of payment, unless it be found to be in error. In applying for payments, the Contractor shall submit a statement based upon this schedule and, if required, itemized in such form and supported by such evidence as the Architect may direct, showing his right to the payment claimed.

Art. 27. Certificates and Payments.—If the Contractor has made application as above, the Architect shall, not later than the date when each payment falls due, issue to the Contractor a certificate for such amount as he decides to be properly due.

No certificate issued nor payment made to the Contractor, nor partial or entire use or occupancy of the work by the Owner shall be an acceptance of any work or materials not in accordance with this contract. The making and acceptance of the final payment shall constitute a waiver of all claims by the Owner, otherwise than under Articles 16 and 29 of these conditions or under requirement of the specifications, and of all claims by the Contractor, except those previously made and still unsettled.

Should the Owner fail to pay the sum named in any certificate of the Architect or in any award by arbitration, upon demand when due, the Contractor shall receive, in addition to the sum named in the certificate, interest thereon at the legal rate in force at the place of building.

Art. 28. Payments Withheld.—The Architect may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate for payment to such extent as may be necessary to protect the Owner from loss on account of:

(a) Defective work not remedied.
(b) Claims filed or reasonable evidence indicating probable filing of claims.
(c) Failure of the Contractor to make payments properly to subcontractors or for material or labor.
(d) A reasonable doubt that the contract can be completed for the balance then unpaid
(e) Damage to another contractor under Article 40.

When all the above grounds are removed certificates shall at once be issued for amounts withheld because of them.

Art. 29. Liens.—Neither the final payment nor any part of the retained percentage shall become due until the Contractor, if required, shall deliver to the Owner a complete release of all liens arising out of this contract, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed; but the Contractor may, if any subcontractor

refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Owner, to indemnify him against any claim by lien or otherwise. If any lien or claim remain unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging such lien or claim, including all costs and a reasonable attorney's fee.

Art. 30. Permits and Regulations.—The Contractor shall obtain and pay for all permits and licenses, but not permanent easements, and shall give all notices, pay all fees and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Architect in writing, and any necessary changes shall be adjusted under Article 24. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Architect, he shall bear all costs arising therefrom.

Art. 31. Royalties and Patents.—The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when the product of a particular manufacturer or manufacturers is specified, but if the Contractor has information that the article specified is an infringement of a patent he shall be responsible for such loss unless he promptly gives such information to the Architect or Owner.

Art. 32. Use of Premises.—The Contractor shall confine his apparatus, the storage of materials and the operations of his workmen to limits indicated by law, ordinances, permits or directions of the Architect and shall not unreasonably encumber the premises with his materials.

The Contractor shall not load or permit any part of the structure to be loaded with a weight that will endanger its safety.

The Contractor shall enforce the Architect's instructions regarding signs, advertisements, fires and smoking.

Art. 33. Cleaning Up.—The Contractor shall at all times keep the premises free from accumulations of waste material or rubbish caused by his employees or work and at the completion of the work he shall remove all his rubbish from and about the building and all his tools, scaffolding and surplus materials and shall leave his work "broom clean" or its equivalent, unless more exactly specified. In case of dispute the Owner may remove the rubbish and charge the cost to the several contractors as the Architect shall determine to be just.

Art. 34. Cutting, Patching and Digging.—The Contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors shown upon, or reasonably implied by, the Drawings and Specifications for the completed structure and he shall make good after them, as the Architect may direct.

Any cost caused by defective or ill-timed work shall be borne by the party responsible therefor.

The Contractor shall not endanger any work by cutting, digging or otherwise and shall not cut or alter the work of any other contractor save with the consent of the Architect.

Art. 35. Delays.—If the Contractor be delayed in the completion of the work by any act or neglect of the Owner or the Architect, or of any employee of either, or by any other contractor employed by the Owner, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay by common carriers, unavoidable casualties or any causes beyond the Contractor's control, or by delay authorized by the Architect pending arbitration, or by any cause which the Architect shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the Architect may decide.

No such extension shall be made for delay occurring more than seven days before claim therefor is made in writing to the Architect. In the case of a continuing cause of delay, only one claim is necessary.

If no schedule is made under Art. 3, no claim for delay shall be allowed on account of failure to furnish drawings until two weeks after demand for such drawings and not then unless such claim be reasonable.

This article does not exclude the recovery of damages for delay by either party under article 39 or other provisions in the contract documents.

Art. 36. Owner's Right to Do Work.—If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this contract, the Owner, after three days'

written notice to the Contractor, may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor; provided, however, that the Architect shall approve both such action and the amount charged to the Contractor.

Art. 37. Owner's Right to Terminate Contract.—If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should, except in cases recited in Article 35, persistently or repeatedly refuse or fail to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the Architect, or otherwise be guilty of a substantial violation of any provision of the contract, then the Owner, upon the certificate of the Architect that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor seven days' written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work, including compensation to the Architect for his additional services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Architect.

Art. 38. Contractor's Right to Stop Work or Terminate Contract.—If the work should be stopped under an order of any court, or other public authority, for a period of three months, through no act or fault of the Contractor or of any one employed by him, or if the Owner should fail to pay to the Contractor, within seven days of its maturity and presentation, any sum certified by the Architect or awarded by arbitrators, then the Contractor may, upon three days' written notice to the Owner and the Architect, stop work or terminate this contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or material and reasonable profit and damages.

Art. 39. Damages.—If either party to this contract should suffer damage in any manner because of any wrongful act or neglect of the other party or of any one employed by him, then he shall be reimbursed by the other party for such damage.

Claims under this clause shall be made in writing to the party liable within a reasonable time of the first observance of such damage and not later than the time of final payment, except in case of claims under Article 16, and shall be adjusted by agreement or arbitration.

Art. 40. Mutual Responsibility of Contractors.—Should the Contractor cause damage to any other contractor on the work, the Contractor agrees, upon due notice, to settle with such contractor by agreement or arbitration, if he will so settle. If such other contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor, who shall defend such proceedings at the Owner's expense and, if any judgment against the Owner arise therefrom, the Contractor shall pay or satisfy it and pay all costs incurred by the Owner.

Art. 41. Separate Contracts.—The Owner reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his work with theirs.

If any part of the Contractor's work depends for proper execution or results upon the work of any other contractor, the Contractor shall inspect and promptly report to the Architect any defects in such work that render it unsuitable for such proper execution and results. His failure so to 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.

To insure the proper execution of his subsequent work the Contractor shall measure work already in place and shall at once report to the Architect any discrepancy between the executed work and the drawings.

Art. 42. Assignment.—Neither party to the Contract shall assign the contract without

the written consent of the other, nor shall the Contractor assign any moneys due or to become due to him hereunder, without the previous written consent of the Owner.

Art. 43. Subcontracts.—The Contractor shall, as soon as practicable after the signature of the contract, notify the Architect in writing of the names of subcontractors proposed for the principal parts of the work and for such others as the Architect may direct and shall not employ any that the Architect may within a reasonable time object to as incompetent or unfit.

If the Contractor has submitted before signing the contract a list of subcontractors and the change of any name on such list is required or permitted after signature of agreement, the contract price shall be increased or diminished by the difference between the two bids.

The Architect shall, on request, furnish to any subcontractor, wherever practicable, evidence of the amounts certified to on his account.

The Contractor agrees that he is as fully responsible to the Owner for the acts and omissions of his subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the Owner.

Art. 44. Relations of Contractor and Subcontractor.—The Contractor agrees to bind every subcontractor and every subcontractor agrees to be bound, by the terms of the General Conditions, Drawings and Specifications, as far as applicable to his work, including the following provisions of this Article, unless specifically noted to the contrary in a subcontract approved in writing as adequate by the Owner or Architect. This does not apply to minor subcontracts.

The Subcontractor agrees—

(a) To be bound to the Contractor by the terms of the General Conditions, Drawings and Specifications and to assume toward him all the obligations and responsibilities that he, by those documents, assumes toward the Owner.

(b) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment under Article 26 of the General Conditions.

(c) To make all claims for extras, for extensions of time and for damages for delays or otherwise, to the Contractor in the manner provided in the General Conditions for like claims by the Contractor upon the Owner, except that the time for making claims for extra cost as under Article 25 of the General Conditions is one week.

The Contractor agrees—

(d) To be bound to the Subcontractor by all the obligations that the Owner assumes to the Contractor under the General Conditions, Drawings and Specifications and by all the provisions thereof affording remedies and redress to the Contractor from the Owner.

(e) To pay the Subcontractor, upon the issuance of certificates, if issued under the schedule of values described in Article 26 of the General Conditions, the amount allowed to the Contractor on account of the Subcontractor's work to the extent of the Subcontractor's interest therein.

(f) To pay the Subcontractor, upon the issuance of certificates, if issued otherwise than as in (e), so that at all times his total payments shall be as large in proportion to the value of the work done by him as the total amount certified to the Contractor is to the value of the work done by him.

(g) To pay the Subcontractor to such extent as may be provided by the Contract Documents or the subcontract, if either of these provides for earlier or larger payments than the above.

(h) To pay the Subcontractor on demand for his work or materials as far as executed and fixed in place, less the retained percentage, at the time the certificate should issue, even though the Architect fails to issue it for any cause not the fault of the Subcontractor.

(j) To pay the Subcontractor a just share of any fire insurance money received by him, the Contractor, under Article 21 of the General Conditions.

(k) To make no demand for liquidated damages or penalty for delay in any sum in excess of such amount as may be specifically named in the subcontract.

(l) That no claim for services rendered or materials furnished by the Contractor to the Subcontractor shall be valid unless written notice thereof is given by the Contractor to the Subcontractor during the first ten days of the calendar month following that in which the claim originated.

(m) To give the Subcontractor an opportunity to be present and to submit evidence in any arbitration involving his rights.

(n) To name as arbitrator under Article 45 of the General Conditions the person nominated by the Subcontractor, if the sole cause of dispute is the work, materials, rights or responsibilities of the Subcontractor; or, if of the Subcontractor and any other subcontractor jointly, to name as such arbitrator the person upon whom they agree.

The Contractor and the Subcontractor agree that—

(o) In the matter of arbitration, their rights and obligations and all procedure shall be analogous to those set forth in Article 45 of the General Conditions.

Nothing in this Article shall create any obligation on the part of the Owner to pay to or to see to the payment of any sums to any Subcontractor.

Art. 45. Arbitration.—Subject to the provisions of Article 10, all questions in dispute under this contract shall be submitted to arbitration at the choice of either party to the dispute. The Contractor agrees to push the work vigorously during arbitration proceedings.

The demand for arbitration shall be filed in writing with the Architect, in the case of an appeal from his decision, within ten days of its receipt and in any other case within a reasonable time after cause thereof and in no case later than the time of final payment, except as to questions arising under Article 16. If the Architect fails to make a decision within a reasonable time, an appeal to arbitration may be taken as if his decision had been rendered against the party appealing.

No one shall be nominated or act as an arbitrator who is in any way financially interested in this contract or in the business affairs of either the Owner, Contractor or Architect.

The general procedure shall conform to the laws of the State in which the work is to be erected. Unless otherwise provided by such laws, the parties may agree upon one arbitrator; otherwise there shall be three, one named, in writing, by each party to this contract, to the other party and to the Architect, and the third chosen by these two arbitrators, or if they fail to select a third within ten days, then he shall be chosen by the presiding officer of the Bar Association nearest to the location of the work. Should the party demanding arbitration fail to name an arbitrator within ten days of his demand, his right to arbitration shall lapse. Should the other party fail to choose an arbitrator within said ten days, then such presiding officer shall appoint such arbitrator. Should either party refuse or neglect to supply the arbitrators with any papers or information demanded in writing, the arbitrators are empowered by both parties to proceed ex parte.

The arbitrators shall act with promptness. If there be one arbitrator his decision shall be binding; if three the decision of any two shall be binding. Such decision shall be a condition precedent to any right of legal action, and wherever permitted by law it may be filed in Court to carry it into effect.

The arbitrators, if they deem that the case demands it, are authorized to award to the party whose contention is sustained such sums as they shall deem proper for the time, expense and trouble incident to the appeal and, if the appeal was taken without reasonable cause, damages for delay. The arbitrators shall fix their own compensation, unless otherwise provided by agreement, and shall assess the costs and charges of the arbitration upon either or both parties.

The award of the arbitrators must be in writing and, if in writing, it shall not be open to objection on account of the form of the proceedings or the award, unless otherwise provided by the laws of the State in which the work is to be erected.

In the event of such laws providing on any matter covered by this article otherwise than as hereinbefore specified, the method of procedure throughout and the legal effect of the award shall be wholly in accordance with the said State laws, it being intended hereby to lay down a principle of action to be followed, leaving its local application to be adapted to the legal requirements of the place in which the work is to be erected.

S P E C I F I C A T I O N S.

F O R

A GRADE SCHOOL BUILDING FOR A THESIS IN ARCHITECTURE

UNIVERSITY OF KANSAS.

THE GENERAL CONTRACT: (1)

The General Contract will be a separate contract and will include all labor and material shown on plans and specified herein, except it WILL NOT INCLUDE PLUMBING, HEATING,& ELECTRIC WIRING. The building is to be built on the Owner's site as shown on plat at "Toonerville". The General Contractor is to notify the other contractors of the progress of the building so they can arrange to execute their part of the work at proper time.

The Contractor will be required to furnish the necessary material and equipment at such times as to complete the work with dispatch to the end that the building will be completed by Nov. 1, 1922, with time allowed for unavoidable delays as defined in Art. 35, of General Conditions. Should the Contractor not have the building completed by Nov. 1, 1922, with time allowed for delays as specified above, he is to pay $8.00 per day to the Architects to pay for Architectural supervision, until the building is completed.

The terms of these specifications are defined as follows:

"Architect" will mean S. W..Bihr,Jr. Architect or his superintendent at the building.

"Owner" will mean the Board of Education,"Toonerville".

"Contractor"will mean the person or persons who will contract with the Owner for the work and material herein specified.

BONDS: (2)

Each Contractor to whom each contract is awarded, will be required to give the Owner two bonds (a performance bond and a statutory bond) as described below, and both must meet the approval

of the Owner.

CONTRACT BOND: (3)

The performance bond is to be for the full amount of the contract price with a licensed Surety Company as surety conditioned on the full performance of the contract in accordance with the Architect's drawings and these specifications.

STATUTORY BOND: (4)

The Statutory bond shall be for the full amount of the contract price in all respects in conformity to law, to protect the Owner from mechanics' labor, material supply men, or sub-contractors liens. No work shall be done until this condition is complied with, unless it is otherwise specifically mentioned in the agreement.

The Owner is to file this bond with the Clerk of the District Court in the county in which the building is to be built.

PAYMENTS: (5)

The Contractor will be paid 90% of the value of the material and labor delivered on the building site or used in the building, less any amount previously paid, on or about the first day of each month as the work progresses, and final payment within 15 days after the building is completed and accepted.

GENERAL WORK

LAYING OUT WORK: (6)

The Contractor shall set all work (location to be given by Owner and Architect), make all levels and measurements required and shall be responsible for the accuracy of same, a competent surveyor shall be employed by the Contractor in laying out the main line and levels of the building.

EXCAVATING & GRADING: (7)

The Contractor will be required to excavate for all footings & basement to depth as indicated on the plans.

The excavating for cement walks will be done by the contractor.

All dirt that is not required for back filling is to be placed on the building site and levelled as directed by the Architect or superintendent.

The back filling is to be well tamped and brought up to the proper grade to readily carry water away from the building. Under no circumstances shall rubbish or debris from the building be used as filling around the walls.

The present and finished grade of the site is approximately as indicated on the drawings.

WATER: (8)

The Owner will have the city water piped to the site and the Contractor is to pay for all water used during construction of building.

PROTECTION OF WORK: (9)

The Contractor shall at all times cover and protect his work and the materials and fixtures to be used therein from damage by weather or otherwise, and shall exercise due diligence to secure the same from injury and all damage resulting from such neglect shall be made good by the Contractor.

OUTBUILDING: (10)

The Contractor will be required to furnish a suitable out-building for the use of the workmen.

REMOVAL OF RUBBISH: (11)

Under no circumstances shall rubbish be allowed to accumulate in the building or on the premises. All dirt and rubbish resulting from the work shall be removed from time to time, and as often as may be directed by the Architect.

Under no circumstances shall materials be taken in or rubbish etc., thrown from windows of the building.

On completion of work, the building premises and adjoining streets shall be made neat and tidy by the Contractor, and the building delivered, clean, whole, tight and fit for immediate occupation.

EMPLOYMENT OF LOCAL LABOR: (12)

The Contractor is to employ local labor whenever possible to do so, without injury to the building or increasing the cost of construction.

C O N C R E T E W O R K

MATERIALS: (13)

All materials used shall be of standard as specified below.

CEMENT: (14)

Cement is to be standard brand of Portland cement conforming to the standard specifications for cement as adopted by the American Society for Testing Material, and shall meet with the approval of the Architect.

SAND: (15)

Sand to be clean, sharp and free from dirt or other injurious substances. Sample to be submitted to Architect or his superintendent for approval.

BROKEN STONE: (16)

The broken stone is to be free from injurious materials and is to be crushed so that it will pass through a 1-1/2" ring.

REINFORCING STEEL: (17)

Reinforcing steel is to be high carbon grade either billet or re-rolled from the head of the rail except the column ties and stirrups, which are to be mild steel, and is to be corrugated or other standard approved type of deformed bar satisfactory to the Architect. All steel shall conform to the standard specifications for reinforcing steel adopted by the American Society for Testing Materials.

The steel must be free from paint and shall not have more than a thin film of rust, and shall be free from all scale, dirt or other foreign matter.

FORMS: (18)

The forms shall be tight and constructed in a workmanlike manner, and shall be of such dimensions and so constructed as to remain rigid and unyielding under the load of the wet concrete. The lumber shall be free from defects and the work shall be so con-

structed as to permit of easy removal without injuring the concrete.

The forms shall be kept thoroughly wet for at least an hour before concreting so that they shall be tight and prevent leaking of concrete. Openings shall be left at the bottom of the columns so that they may be cleaned out after the forms have been washed.

The time for removal of form work shall depend upon the weather conditions and shall be subject to the approval of the Architect. The minimum time under any conditions shall be six days after concrete has been poured for column forms and beam sides, while slab forms and beam soffits may be removed in 15 days, providing a reasonable number of vertical supports are retained. These vertical supports are to remain until the supported slab and beams are able to stand the superimposed load without deflection.

Under any circumstances the removal of the forms shall be at the risk of the Contractor.

FOUNDATIONS: (19)

Build all concrete foundation, walls, area ways, etc., as indicated on the plans.

All concrete foundations to be of the width, thickness and shape indicated on the drawings. All to be brought up to the required height and to be nicely levelled to receive the brick.

All the above concrete to be composed as follows:
One (1) part Portland cement, two (2) parts sand and four (4)parts of broken stone.
Same shall be mixed in a batch mixer and shall be deposited in the forms immediately after mixing. The concrete shall be well worked during placing so that all reinforcing steel shall be completely surrounded and a mixture free from air pockets shall result. No concrete shall be used which has been mixed for more than thirty (30) minutes before depositing.

No concreting shall be done if the temperature is below

32 degrees unless the structure is enclosed in a weather tight enclosure artifically heated at least 40 degrees, and if the temperature is between 40 degrees and 32 degrees the water, sand and rock shall be heated and used immediately.

The concrete shall be mixed to a fairly wet consistency but not enough to cause any marked separation of the cement during the process of depositing.

All exposed surface of the concrete is to be free from irregular or rough places and the contractor shall go over and remove any rough spots and fill in any low places with Portland cement mortar mixed one to two (1 to 2).

The reinforcing in exterior foundation wall is to be six 1/2" round rods, same to be continuous around building allowing two foot lap at joints. See foundation plan for location of same. Also see specifications for reinforcing steel.

Build Coal chutes, areas, etc., as shown on foundation plan. See ironwork specifications for coal hole door.

REINFORCED CONCRETE:(20)

Reinforced concrete stairs, floors, and beams to be of one part Portland cement, two parts of sand and four parts broken stone. (See foundation specifications for method of mixing, etc.)

See specifications for reinforcing steel.

Construction joints shall be vertical and shall be made at the center of slabs and beams at right angles to the direction of the main reinforcing steel. Such joints shall be thoroughly cleaned of loose material and grouted with cement before joining new concrete to old.

All reinforcing steel shall be placed accurately in position as shown on the drawings and shall be kept the following distances from the forms, slabs 1/2", beam and girders 1", columns 1-1/2",

footings 2".

All reinforcing steel shall be held off of the forms and tied together by Havemeyer Ty chairs, spacers, beam saddles etc., All bars must be secured against displacement while the concrete is being poured and tamped.

The entire first and second floors are to be reinforced concrete.

This contractor shall set and build all ties, anchors, belts, angles, etc. and all ironwork comming in connection with the reinforced or plain concrete. Provide ties for face brick in exterior lintels.

Contractor to note the continuous rods in lintel in exterior wall. The thickness of reinforced concrete floors on framing plan does not include the 3/4" finish concrete.

TESTS:(21)

The slabs shal l be tested by loading any two selected panels on any floor so designated by the Architect. The test load to be twice the figured live load uniformly distributed on the whole panel and one third of the adjoining panels. Under this load the slab shall not show a deflection of more than 1-400 of the span at the center of the panel.

Corridor, Study Halls, Auditorium and Aud. Balcony	100# per sq.ft.
Class Room Floor	60# per sq. ft.
Manual Training	150# per sq. ft.

TOP FINISH: (22)

The top finish of stairs throughout the building shall be one (1) part Portland cement and one and one-half (1-1/2) parts clean sharp sand applied 3/4" thick over the concrete slab. This finish shall be floated and trowelled perfectly smooth and brought to a hard even surface without applying dry cement while trowelling.

The concrete floors are to be run as near as possible to make wood finish floor level with other floors, and where this cannot be done by making the rough slab higher under the floors that have concrete or tile floors it is to be done by making the rough slab thicker. All cement steps are to be treated with floor hardener as specified elsewhere.

CEMENT FLOORS ON FILL:(23)

Cement floors on dirt fill will be used as shown on floor in basement except Gymnasiums.

Floors to have three and one-quarter inch rough floor of concrete as specififed under foundation and 3/4" top coat as specified for top finish. See wood floor on concrete for spacing floor clips.

These floors to be reinforced with four inch by sixteen inch mesh, Number 7 to 10 wire, Clinton wire fabric, manufactured by Clinton Wright Wire Co., Worchester, Mass. See floor hardener specifications.

CONCRETE STEPS & STAIRWAYS: (24)

All concrete steps and stairways are to be built of concrete as specified for foundations, except reinforced concrete work is to be specified for reinforced concrete slabs, etc.

The main stairs are reinforced as indicated on plans and the balance of stairs and steps will be reinforced with mesh as specified for cement floors on fill.

Top finish of stairway and steps will be as specified for cement floors.

See specifications for floor hardener which is to be used on all stairs.

See specifications for Mason Safety Treads which are to be used on main stairways.

See plans and detail for rail construction and see that re-

inforcing rods for supporting rail are properly bent into place.

SIDEWALKS: (25)

The Contractor is to include in his figure the three cement approaches to the building also cement sidewalk and curb as shown on plot plan and is to be built of same proportion concrete as that for cement floors, These sidewalks are to be four inches thick and finished in a thoroughly workmanlike manner.

SHOE SCRAPER: (26)

The Contractor is to furnish six show scrapers at entrances as directed. The scrapers are to be iron grill as specified under iron work over a concrete pit 2'-0" wide by 4'-0" long and 8" deep.

CEMENT BASE: (27)

Build a cement base 4" high around all the cement finished floors, except boiler and coal rooms. Base to be rich mixture of patent plaster, Portland cement and sand trowelled smooth. Base to be shown on details and to be stopped off by means of metal ground (See specifications Sheet Metal Work.)

FLOOR HARDENER (28)

All inside cement finished floors including cement base and treads of stairways and step are to be treated with three coats of Lapidolith applied as per the Manufacturer's specifications. The quantity specified to be used by the manufacturer is to be furnished and if it is found that the floors will not absorb this quantity, the unused Lapidolith is to be left in the building for the use of the Owner, (Lapidolith is made by L. Sonneborn & Son, Inc., 114 - FifthAve., New York City) Concrete ceilings and walls of Play Rooms not specified to be plastered, are to be given two coats of cemcoat made by L. Sonneborn & Son, Inc. or two coats of sta-white as manufactured by Detroit Graphite Company, Kansas City, Missouri.

The cemcoat or sta-white are to be white color and applied as per manufacturer's specifications. Before painting these ceil-

ings the rough places are to be removed from concrete and all holes or pits in concrete are to be properly pointed up with mortar to match concrete work.

The ceilings and walls in Boiler and Fuel rooms to be left unfinished.

COLLARS, ETC.:(29)

Insert metal collars or sleeves in floor slabs for pipes as required. The metal collars or sleeves are to be furnished by heating and plumbing Contractor. The Contractor shall procure from the plumber and steam fitter the exact location of pipes, traps and fittings and do all framing around same required by the design as directed by the Architects.

WALL TIES: (30)

Necessary wall ties of approved pattern to bond face brick work against concrete lintels etc., shall be imbedded in the reinforced concrete as work progresses.

NOTIFICATION OF CONTRACTORS:(31)

This Contractor shall notify the electrician, plumber, steamfitter, etc., as soon as the form work for each respective floor is ready and before concrete is poured. He shall give them a reasonable time in which to complete their portion of the work necessary to lay their conduit, pipes, etc., before starting to concrete.

COMMON BRICK: (32)

The backing up for all outside brick wall and all inside brick wall are to be built of good quality hard burned common brick as approved by the Architect.

In no case shall metal ties be used to tie face brick into backing up brick.

In hot weather the brick are to be well wet before laying and in freezing weather no brick are to be laid except at the direction of the Architect.

The brick masons are to place all wood block, anchors, etc., as the wall are being erected.

The brick necessary for the boiler settings are to be furnished and laid by the heating contractor.

The General Contractor will be required to provide chases in the walls wherever necessary to receive pipes. Also necessary chases for ventilating flues as shown on the plans. All joints are to be neatly struck on inside of chimney, Boiler room, coal room manual training room, Gymnasiums, Boys & Girls locker rooms and wherever walls are not to be plastered.

FIRE BRICK:(33)

Line the large smoke stack as shown on plans with fire clay brick layed in fire clay mortar, from a point 12 inches below where coiler smoke pipe enters it to a point 15' above boiler smoke pipe.

FACE BRICK: (34)

All exterior brick including face brick inside entries to by Hytex brick # 611 (sold by Western Brokerage Co., Hutchinson,Kans.) or Claycraft, M.& B. Co., brick # 2-A (sold by the Reliance Brick Company, Wichita, Kansas.) The Owner reserves the right to substitute other face brick as may be selected and adjust the cost.

The brick courses are figured allowing 2-5/8" for a brick

and a joint, with slight variations to make courses fit openings in wall. There is to be no variation from the number of courses shown, unless specifically instructed to do so by the Architect. All face brick are to be bonded with an alternate header and stretcher course every sixth or seventh course.

All brick to be laid on a full bed of mortar with joints slushed reasonably full, and walls shall be kept plumb and straight and true to line. Build brick arches to carry walls over openings wherever necessary.

The vertical joint between the face brick and backing up brick is not to be filled with mortar. Point up carefully around all lintels, sills, windows and door frames. See Specification for common brick as to condition governing the laying of brick.

All joints in face brick work to be raked out 1/4" and pointed with square pointer. IMMEDIATELY AFTER POINTING UP, face brick to be well brushed with stiff brush and all particles of mortar removed from face of brick, then paint face of brick with one good coat of one(1) part linseed oil to nine (9) parts coal oil. Care must be taken to keep brick work clean after this painting and if necessary whole building will be re-cleaned at completion and painted as above.

MORTAR: (35)

All brick except face brick to be laid up in mortar composed of 1 part of lime putty, 1 part Portland cement, and 5 parts of clean sharp sand. All to be thoroughly mixed and to be used immediately after mixing. The lime is to be slacked at least two days before it is used.

Mortar for face brick is to have Atlas white cement inplace of Portland cement.

STONE TRIMMING: (36)

All stone trim is to be Bedford, Indiana, stone of a good

quality, and free from imperfections that mar its appearance or injure its usefulness. It is to be set in a carefully prepared lime mortar tempered with Stainless cement. The mixture to consist of one (1) part lime, three (3) parts sand and stainless cement in amount equal to 15% of volume lime used.

All stone trim will be standard Buff Bedford Stone. All stone to be sawed faced. Joints to be neatly made and pointed up at completion. The Contractor is to furnish setting plans, showing joining for the Architect's approval before the stone is shipped.

The No. 1 Carthage stone will be acceptable, providing it meets with the above specification and is free from open, injurious seams.

All stone to be well anchored to backing with suitable iron anchor; also provide holes for inserting rods as indicated on detail of front entrance.

(See Alternate for Terra Cotta).

TILE WORK:(37)

The floors in boys toilet in Basement and girls toilet in Basement and front entry are to be of tile as follows:

Lay 1" hexagonal white tile floor, with suitable border as selected by Architect, same to be laid up in a neat cement mortar

MARBLE BASE: (38)

Provide 6" marble base around all tile floors same to be 7/8" thick. Secure marble in place in a thorough workmanlike manner.

SHOWER STALLS: (39)

Shower stall in Boys Shower to be 1" marble or slate. All sides and sill to be fastened together with nickel plated brass angles bolted. Curtain rod to be # P2979 Standard Mfg. Co.,plumbing catalog, 1920. (See Detail.) Floor to be concrete slooped from four sides to floor drain in center.

Girls: The above specifications apply to shower stall in

Girls shower room except the shower stall to have dressing compartment with seat and to be equipped with two curtain rods.

Plumber will furnish the curtain but this contractor to furnish curtain rods. (Note concrete curb.)

CLOSET STALLS: (40)

All to be marble same as shower stalls, back and ends to be 6'-0" high, partitions to be 5'-0" high set up on 1-1/4" nickle plated standards and have 1-1/4" N.P.Top rail on one foot standard above each jamb.

All jambs to be 6" wide and 5'-0" high except end jambs to be 3" x 6'-0". Closet stalls in Girls Toilet rooms to have 2'-0" x 5'-0" x 1" four panel doors fitted with nickle plated spring hinges and indicator bolt.

PREPARATION: (41)

Slating Contractor shall examine roof boarding and report to carpenter all defects which would be detrimental to the durability of the finished roof and shall seethat defects are remedied before applying felt.

Carpenter contractor shall furnish and apply a cant strip nailed about 2 inches above the eave line of the slate and shall put water shedding cant strips back of chimneys and up the sides of dormers and where else required.

The Carpenter contractor shall also build up forming where curved slate valleys are shown and furnish and place all blocking required by roofer.

Roofing Contractor shall furnish and apply elastic cement where in his judgement the same is necessary.

FELT: (42)

Cover surface to be slated with Slater's asphalt unpregnated roofing felt weighing 40 lbs. to 100 sq. ft lapped 6 in at joinings.

SLATE: (43)

All surfaces prepared for slate as above described shall be covered with Tuder Stone Roofing Slate as made by the Rising & Nelson Slate Co., West Pawlet, Vt.

Thickness, exposure to the weather and character of laying shall be as indicated on roof layout prepared by the Architect's Service Dept. of the Rising & Nelson Slate Co., under the direction of the Architect.

NAILS: (44)

Nails shall be yellow metal slater's naild of sufficient length to adequately penetrate the roof boards using not less than two to each slate.

[illegible]: (45)

FLASHING: (45)

The sheet metal contractor shall furnish and the slate contractor shall install 16 oz. soft rolled copper built in flashings as required at closed valleys, chimneys, dormers and other necessary places. Flashing shall extend not less than 4 in. exposed above the slate on a line at right angle to the roof and shall not be nailed to the vertical surface. Roofing Contractor shall insert all aprons required, which will be furnished by sheet metal contractor. Sheet metal contractor shall apply counter flashings make same secure against leaks.

VALLEYS: (46)

All open valleys shall be 16 oz. soft rolled copper 20 in. wide nailed at the top only. In applying slate care should be taken that no nails penetrate the sheet metal valleys.

RIDGE ROLLS: (47)

Form 16 oz. copper hip or ridge rolls as required.

GUARANTEE: (48)

Contractor shall guarantee to maintain all slate roof surfaces in a water tight condition for a period of 2 years.

VENTILATING DUCTS:(49)

All vent ducts from toilet rooms to be lined with 26 gauge galvanized iron erected in substantial manner.

VENT REGISTERS: (50)

Furnish and place vent registers for all ventilating ducts as shown. These to be built of 26 gauge black iron made up as shown on detail and given one coat of red lead and oil at the shop and exposed srufaces painted two additional coats of lead and oil paint after plastering is done. Color to be black or as instructed.

FOOTLIGHT TROUGH:(51)

Line bottom and sides of footlight trough with bright tin full length of trough.

CORNER BEADS & METAL GROUNDS:(52)

Furnish and place metal corner beads on all exposed corners where plaster corners are not shown rounded. (Note the window construction shows plaster jambs to be bullnosed.)

See Plasterer's specifications.

Provide and place galvanized iron ground at top of all cement base. Same to be of design as shown on detail and made of 24 gauge galvanized iron.

Knapp metal ground of # 49 may be substituted for the above.

STRUCTURAL STEEL: (53)

Place 3-1/2" x 3-1/2" x 5/16" steel angles over all windows and door openings in outside walls to carry face brick. Wherever the openings are more than four feet wide the angles are to be secured to the wood or concrete lintel by means of 1/2" by 6" bolts about three feet on centers.

The Lintels over 20'-0" window openings to be composed of 14" x 40# I-Beam, and 14" 25.6# channel and one 3-1/2" x 3-1/2" x 5/16" angle. The angle is to be riveted to the channel and all bolted together in a substantial manner. These lintels to be 18" longer than width of opening.

Lintels to be 12" longer than opening over all openings less than 6 feet wide and 18" longer than opening over all other openings, except they are to be as shown on plans for very large openings.

Furnish and erect over stage one I-beam to be 20" sixty-five pound 29'-0" long. Place 10" x 12" x 5/8" bearing plate under each end of I-beam.

Furnish and erect complete all steel and iron required for wood trusses as shown on details. Furnish the bearing plates as indicated. Also rods, plates and turn buckles for supporting balconys.

Furnish and erect complete all steel shown over second story corridor or roof framing plan and all other steel called for on plans, sections, elevations or details.

Furnish necessary anchors to anchor door frames in place. Also anchors to tie stud partitions to brick walls.

All stud walls to be built of metal studs. (See partition construction lathing and plastering specifications.)

SHOE SCRAPER: (54)

Provide six (6) gratings for shoe scraper at entrance. (Two for Main Entrance.) Same to cover pitts 2'-0" x 4'-0" as

mentioned in concrete work. The scrapers are to be made up of twenty-five 1-1/2" x 1/4" x 4'-0" iron bars spaced one inch on centers. (Note this will make bars 3/4" apart.) Bars to be fastened together by means of one-half inch rods passing through them 12" apart, with necessary separators.

STAIR CONSTRUCTION:(55)

Furnish and erect necessary iron work for stairway as indicated on details of main stair.

Upright supports to be 3/4" rods properly imbedded in concrete as specified. See detail

THRESHOLDS:(56)

Furnish and place cast iron thresholds under all outside doors except boiler room. Same to be securely fastened to concrete.

COAL CHUTES:(57)

Furnish and place two 30" x 30" hinged wrought iron coal doors as indicated on plans same to be provided with substantial frames and locking device. Also provide means by which door can be held open while in use.

MASON SAFETY TREADS:(58)

Cement finish steps in two main stairways are to have Mason Safety Treads with deep nosing as per figure 5 Sweet's Architectural catalog fifteenth edition. The safety treads are to have lead or carborundum filled grooves and are to have suitable anchors to securely fasten them to concrete steps.

The treads are to be 12" shorter than the concrete stair tread, and are to be painted black upon completion. (Sold by American Mason Safety Tread Co.,604-Ridge Bldg., Kansas City, Mo.)

(See concrete specifications for stairway.)

CLEANOUT DOOR: (59)

Furnish and install an 18" x 12" cast iron cleanout door at bottom of Boiler flue, and a 6" thimble and 8" x 8" cleanout door in chimney in Domestic Science Room. Furnish dome damper, cleanout door and ash dump in Fireplace.

ANCHORS: (60)

Anchor every third rafter to walls by means of strap iron anchors. These anchors to be made at least 2 feet long of 3/16" x 1-1/4" strap iron, and to have 1/2" x 8" rod secured to one end, and four holes punched along the straps for nailing to rafters or joist. Where walls run parallel to rafters they are to be anchored to rafters by means of 3/16" x 1-1/4" strap iron anchors made as above except they are to be three feet long and rafters blocked between with 2" stuff.

C A R P E N T E R W O R K.

SCOPE OF WORK:(61)

This work shall include all rough and finish woodwork all rough hardware and its setting, setting of finished hardware, and all form work for concrete, etc.

Contractor to build and furnish all necessary scaffolds for proper progress of work same to be safe and well constructed. The contractor will at all times furnish proper access, scaffolds etc. for purpose of superintendent's inspection of all progressing work.

The carpenter shall do all the necessary work in his line as is usually required by the other mechanics about the building such as cutting away and rebuilding, fitting to other work, etc.

Plumbing pipes not run in pipe shaft shall be built in by general contractor, except all pipes shall be exposed in basement.

The Contractor shall furnish and set all necessary forms and centers and shall not remove same until the walls are thoroughly set. The contractor shall furnish all wood brick, bond timbers rough brackets, etc., and do the necessary measuring to locate same.

Anchor door frames and partitions in a substantial manner.

LUMBER: (62)

All dimension lumber shall be yellow pine or fir and free from damaging imperfections. See interior and exterior trim etc., for other lumber.

FRAMING: (63)

Frame the roof and roof trusses as indicated on sections with proper joists, plates, etc. size as shown, Frame balcony on side of fan in fan room with cantelever construction.

All framing necessary for the completion of the work whether specifically mentioned or not, to be done in an approved manner, the timbers to be spaced as indicated on drawing. See specifications for Iron work for necessary anchors, straps,etc.

SHEATHING: (64)

Sheath roof as shown withl" x 10" lumber (lumber which has been used for form work and in good condition can be used.)

Furr up to the proper slopes and form all crickets on roof as indicated on drawing or as directed.

Furnish and install a 3" x 3" triangular wood strip in the angle formed by roof and vertical surfaces.

GROUNDS AND FURRING: (65)

Put up the necessary ground for securing all finish, blackboards, etc. throughout the building. Grounds to be secured to walls by plugging. Same to be plumb and straight.

This will necessitate cutting in strips between for nailing wall board at ends.

See specifications for wall board.

GLAZING: (66)

All glazing is to be shown on schedule for doors and windows and as indicated on plans and details for glazed partitions.

See specifications Doors and Windows.

FLOORING: (67)

All wood flooring to be clear maple flooring securely nailed, planed and scraped to a smooth finish, with a machine finisher.

All wood floor to be nailed to 2" x 2" wood screeds spaced 16" on centers. These screeds to be made by cutting 2" x 4" pieces into strip 2 strips, held in place by"Bull Dog" or "Columbia" floor clips. The screeds used over floors over dirt fills to me mopped with hot pitch and have layer of tin paper over same before finish floor is laid. (See concrete specifications.)

INTERIOR TRIM:(68)

All inside finish lumber is to be well seasoned, clear red

oak. All of the above to be the "A" quality selected material perfectly kiln dried.

EXTERIOR FINISH: (69)

All exterior finish lumber is to be either clear white pine or cypress.

All exposed woork such as frames and the like to be primed at shop with white lead and oil. Window and outside door frames to be primed on all sides.

WINDOWS: (70)

Window frames to be made of various sizes as indicated on the drawings, construction to be as shown on detail

The exposed portion of frame to be of white pine or cypress as specified, balance of frame to be made up of yellow pine.

All sash for windows are to be 1-3/4" thick of clear white pine of sizes as shown on schedule and divided as shown on elevation. (Note the extra width of bottom rail in detail.)

See note on priming in exterior finish lumber.

DOORS: (71)

All doors are to open as shown on plan and to be size as indicated on schedule.

Jambs in interior doors are to be 7/8" thick and outside jambs to be 1-5/8" thick.

Inside jambs to have stop planted on as shown on detail. Outside jambs to be rabbeted for doors.

The inside doors are to be two panel Oak doors, design 1125 Universal Millwork Design Book " 20 and where doors are marked glazed they are to have top panel glazed as shown. The glass is to be divided with wood muntins as shown. Muntins to be same size as for windows.

Exterior doors to be as shown on elevations and details.

All transoms are to be glazed with clear double strength

"A" quality glass, except transoms over doors to Toilet rooms and dressing rooms are to be glazed with maze glass.

See schedule for glazing all doors and windows.

MISCELLANEOUS MILLWORK: (72)

There is to be a wood cap as detailed for balcony rail in Auditorium.

Build footlight trough as shown on detail, working with the electric contractor on same.

Glazed partitions shown on plans are to be constructed as indicated on detail. Same to be glazed as indicated.

Build scuttle hole where shown on roof plans.

Build up outside entrance doors into Manual Training room as shown on detail and described on schedule.

Place wainscot cap in all corridors as indicated on plans or sections.

Furnish and erect bulletin board where shown on plans and as indicated on detail.

No inside doors or flooring shall be brought into the building until the plastering is dry. All woodwork that is to be stained is to be stained on bench wherever possible.

The Locker Case is to be built as detailed, also Office counter, and Library counter and shelves.

Build Scuttle hole and cover fastened in place with wrought iron hooks.

BLACKBOARDS: (73)

The contractor is to furnish and place all blackboard.

Blackboards to be 1/4" thick, smooth, straight, natural slate blackboard, set in substantial frame as shown on detail. Blackboard to be 3'-6" high and top of chalk trough as shown to be 2'-6" above the finished floor.

Blackboard is to be set with plaster of paris putty or other approved caulking behind same. End joints are to be scraped after it is in place to remove any unevenness.

The finish coat of plaster may be omitted behind the blackboard.

All chalk trough to have Dudfields' Dustless Metal Crayon Trough as shown on detail. (Dudfield Mfg. Co., Liberty, Missouri).

HARDWARE: (74)

All hardware (both finish and rough) is to be furnished by the General Contractor. All finish hardware on doors is to be dull brass finish unless otherwise specified. All numbers of finish hardware are taken from the Russell Irwin Catalog and the Stanley Co.'s. catalog unless otherwise noted. Hardware of similar design and quality, furnished by Yale and Towne Mfg. Co., P. & F. Corbin Co., and Sargent & Co., will be considered equal to the hardware herein specified.

Each pair of entrance doors to have:

60 exit bolt on left hand door

#1098 Cer. lock set 9 fin. on right hand door, except to have #9152-1/2 lock in place of #9098.

Each of these doors to have # D Russwin door check, or Yale #74 or Norton Door check gold bronze finish, One # 254 door holder, 3-#ZF 250 - 6 x 6 Butts and 2- 33" x 10" #14-BE Polished brass Kick plates.

Boiler Room doors to have:

1 - # 2040 chain bolt size 8" with 3'-0" chain at top and # 2041 size 8" bolt at bottom for left hand door.

1 - # 1098 Berk. lock set 9 fin. Each door to have 3 butts #ZF 250 - 4-1/2 x 4-1/2 butts.

Main Entrance Vestibule doors to have:

#704 Bommer floor hinge with jamb plates and cement floor box and # 7280 door holder for each door.

Double Doors Corridor to Auditorium and

Double doors Corridor to Balcony to have:

60 exit bolt on left hand door

1228-1/2 S4 Berk. lock set 9 fin. on right hand door and each door to have 1-1/2 pr B.B. 241-F 4-1/2 x 4-1/2

butts, one D Russwin door check, and one # 7280 door holder.

Each door to toilet stalls - Girls Toiler to have:

1 Set #1025 Bommer Spring pivots for lavatory doors- nickle plates for 1" marble and 1-1/8" doors.

1 set #0156 Russwin lav. bolts except to have strike # 3 All to be # 4 finish.

Gate to Office to have:

1 Pr. #730 Bommer Spring butts

1 #656-1/2 Secret Gate latch - 9 fin.

Every other inside single acting door to have:

1 - 1/2 Pr BB 241-F 4-1/2 x 4-1/2 butts.

1 - #01224-1/2 S4 Berkeley - 9 fin. lock set

1 - #7280 door holder 9 fin.

1 - #7201 door stop 9 fin.

Every other inside double acting door to have:

#615 Bommer Spring butts with right angle jamb socket plate for cement or tile floor where required.

#1208-1/2 Mortise Dead Bolt 9 fin.

1 Pr. # 625 Berkeley door pulls cut for cylinders.

7280 door holder 9 fin.

Note:--All doors, cases, padlocks etc., having cylinder locks to be Master Keyed. Furnish 12 Master Keys.

Each Transom (except transoms over outside doors, and windows to be stationary) to have:

1 Pair of 3" x 3" butts 241-F

Transom lifts 30-1/2 3 ft 9 fin.

Each double hung window to have 7210 lock 9 fin.

" " " " " " 2 sash lifts.

7033-1/2 9 fin. and #7031 sash sockets 9 fin.

Furnish 24 oak window poles #127, 6 ft.

24 pole hangers #7015 9 fin.

24 pull down hoots T-7027 9 fin.

All top sash in Auditorium except windows next to stage to be operated with "Superior" A.E. sash operators in sets of 3 sash and to be operated from low level of Balcony. All to be Dull Brass finish and fitted with removable handle.

Sash to have sash centers and all devices complete.

"Superior" sash operator manufactured by Payson Mfg. Co., 2920 - Jackson Blvd. Chicago,

SCOPE OF WORK: (75)

All walls and ceilings in the Boys Toilet and Girls Toilet and Domestic Science Room in Basement to be plastered.

All walls and ceilings throughout the first and second floors to be plastered.

All stud walls throughout the building to be lathed and plastered on both sides.

LATHING: (76)

The metal lath to weigh not less than 2-1/4 pounds per square yard, and to be 27 gauge equal to General Fireproofing Co., or Berger Mfg. Co., painted expanded metal lath, or 26 ga. 2/8" Hy Rib.

Wherever it is necessary to lath over chases in walls it is to be done with lath as specified above.

The ceiling over the Boys Toilet room and under balcony in Auditorium to be constructed as follows; Suspend 1/4" round rods 4'-0" on centers from slab above. Secure 2" channels 16 ga. to the above hangers, making the 2" channels 4'-0" o.c. Secure 3/4" channels 12" on centers, to the 2" channels. Fasten the channels together with 16 ga. galvanized annealed wire. Then apply the metal lath to this furring using 16 ga. galv. annealed wire as directed below.

METAL LATH CEILINGS AGAINST WOOD JOISTS.

Securely fasten 7/32" or 1/4" round pencil rods against the bottom of the wood joists, not over 13-1/2" centers. Fasten pencil rods to each ceiling joist with 16 ga. galvanized annealed wire. Metal lath sheets to lap not less than 1/2" along the sides and 1" at ends and to be tied to pencil rods with # 16 ga. galvanized annealed wire not over 8" centers. Centers of joints between pencil rods to be tied, both at the sides and ends. Or the Contractor may omit

the pencil rods and use 24 ga. 3/8" Hy rib wired direct to joists.

PRESSED STEEL HOLLOW PARTITIONS:(77)

All partitions not shown to be brick or concrete are to be pressed Steel hollow partitions built of 2" Pressed Steel Channel Studs weight .78 pounds per foot or 1/6" metal. Partition to have pressed steel channel plates and caps fastened to studs by means of standard mortise and tenon joints.

Studs to be lathed both sides with No 26 gauge 3/8" Hy-Rib Lath attached to studs by metal prongs 4" o.c. or wired to stud every 4 inches with # 16 ga. wire, or 27 ga. expanded metal lath (weight 2-1/4# per sq. yd.) may be used in which case studs must be not more than 13-1/2" o.c.

PLASTERING: (78)

Plaster all rooms as mentioned under scope of work. All to be smooth hard finish.

The plastering in Basement ceilings and First Story ceilings to be plastered directly on concrete slab. Slab is to be thoroughly brushed with stiff wire brush and all loose cement, dust, etc., removed before plastering is started. Use a very rich mixture of patent plaster and Portland cement with only a small amount of sand in first coat on concrete ceilings, and do not use only enough plaster to straighten, then apply finish coat making 2 coat work on concrete ceilings.

No plasterer who has not had previous experience plastering on concrete ceilings and can show first class work on this kind of construction is to be permitted to plaster on this building.

All other plastering is to be three coat work.

The plaster used on the first two coats shall be of standard brand of double fibred patent plaster as approved by the Architect. Use only a small amount of sand in first coat on metal lath, other-

wise all plaster to be applied as per manufacturer's specifications.

All finish plaster to be composed of equal parts Keene cement and lime putty or use Plaster Paris finish coat.

Proper grounds are to be provided for all plaster work and walls are to be kept true and straight. In case grounds are not found plumb and true in every respect, the plasterer shall notify the carpenter and see that same are made so before beginning the plastering as after the plastering has begun the plasterer will be held responsible for same.

The Plasterers will be required to patch all plaster after other mechanics are through and will be required to replace any plaster that shows signs of cracking or peeling within a reasonable length of time after plaster is applied.

ORNAMENTAL PLASTERING:(79)

Furnish all ornamental plastic brackets and run plaster bonds and cornices in Auditorium, as per detail. See Section for Procenium Arch outline; continue plaster panels as shown on East wall of Auditorium. Run moldings on Balcony and under Balcony as per details.

All to be plaster of Paris or Best's Quickset Keene cement put on by skilled mechanics.

ACOUSTICAL TREATMENT IN AUDITORIUM:(80)

The acoustical contractor shall furnish and apply acoustical material in this interior as follows:

On the twelve main ceiling panels starting from rear wall and on a panel 15' deep and 50' wide on ceiling under the balcony shall be installed 8240 co-efficient units per square foot one inch value of "Multi-Fibre" acoustical felts as made under the formulae of Union Acoustical Co., of St. Louis, Mo., these acoustical felts to be in both quilted and semi-pressed form and applied in two or three thicknesses as determined by analysis.

These acoustical felts then to be covered with Union Acousti-

cal stretching canvas weighting from 4 to 5 ounces per sq. yd., floated on blind seams and stretched tightly and permanently without sags or wrinkles.

The scaffolding for this work, the marginal grounds on the main ceiling panels and the panel on balcony ceiling and the marginal mouldings as noted in the plans shall be furnished and installed by the Acoustical Contractor and all shall be substantially erected.

The acoustical Contractor shall furnish an adequate amount of "Acousti-Paint" a special fabric coating or paint for painting the canvas membranes, to the general contractor, but not apply same. The application of this acoustical paint to be made by the General Contractor. The General Contractor will furnish and place all base grounds, and will furnish scaffold for the acoustical contractor.

The acoustical contractor shall furnish the Architect a full analysis showing results to be obtained and furnish authoratative data if necessary, and shall also furnish for reference a list of at least twenty acoustical installations made by him as an indication of his competency in executing this work.

The space of ceiling that is to be covered with acoustical treatment is to be plastered two coats, but the finish coat may be omitted. The metal lath and plaster both may be omitted in panel under balcony but the supports are to be placed as if lathed and plastered.

ALTERNATE ACOUSTICAL TREATMENT:(81)

The Contractor is to state the amount to be added if Johns-Manville Acoustical treatment in accordance with their standard method is applied to seven (7) main ceiling panels, making approximately 3000 sq. ft.

The General Contractor will furnish and erect all base grounds, and will furnish and erect all scaffolding for use of acoustical

contractor.

Between the wood base strips securely fasten Johns-Manville Akoustikos Felt 1" thick. This special felt to be made of selected long cattle hair, burr picked, steam cleaned and chemically treated, with an inner lining of cotton gauze to increase the tensile strength and is guaranteed not to be attacked by vermin, moth or bacteria of any kind.

The Akoustikos Felt and all materials used in fastening same will be completely concealed from view with a membrane of Decorators Canvas or its equal, furred out a distance of approximately 1-1/4" from the face of felt and stretched smooth and tight so as to be free from wrinkles and sagging. Each panel will be framed with a wood moulding of such design as to harmonize with the plaster cornice and preserve the Architectural design of the ceiling panels.

The membrane will be painted with one good uniform coat of Johns-Manville Akousto-Lite Fabric Coating and the wood moulding with three coats of best lead and oil paint, the color of both membrane and moulding to be selected by Architect.

The entire treatment as installed will conform to the architectural treatment of the auditorium and harmonize with the interior finish and decorations.

Pages 43 through 54 do not exist.

P A I N T I N G.

SCOPE OF WORK: (82)

The painters will be required to paint all outside woodwork exposed iron, etc., also all interior wood trim, and plastered walls as specified.

All nails must be set by the carpenter, painter to putty all nail holes and small defects and stop all black knots with shellac before priming, and putty after priming is done.

Care must be taken to avoid staining the floors, etc.

Wherever possible stain work shall be done at the bench.

See specifications on Floor Hardener, and cem-coat.

OUTSIDE PAINTING: (83)

All steel and iron shall be painted one coat of red lead and linseed oil paint and where exposed to view it shall be painted two additional coats of lead and zinc paint. The first coat on iron is to be applied at the shop or before it becomes rusted.

All exposed wood shall be painted three coats of strictly pure white lead, zinc and linseed oil white paint. Do not use more than 1/3 as much zinc as lead in the paint.

All outside wood shall be primed as soon as placed and brushed to a uniform film with air bubbles removed. Each coat is to be thoroughly dry before the following one is applied.

All the outside doors are to be painted on outside with 3 coats of paint as directed. Top and bottom edge to be well filled.

INSIDE PAINTING: (84)

All inside finish lumber to be stained Golden Oak stain. Oak finish to be filled with paste filler, other finish to receive 1 coat liquid filler.

Then apply two coats best varnish to the well filled wood. Last coat to be applied when all other mechanics have completed their

work. Rub between coats with fine sand paper or steel wool.

The stain is to be of a Golden Oak color, and is to be equal to Pratt & Lambert oil wood stain.

All stains and varnishes are to be approved by Architects, and brought to buildings in their original containers.

The woodwork in the interior of all cabinets, and shelves to be stained and rubbed but not varnished.

All woodwork in Boiler and fuel room to be painted two coats of light gray paint.

The painters shall not paint or stain any work that is not perfectly surfaced, and will be held responsible for a thoroughly first class job on completion. All finger marks, grease, dirt or other objectionable matter shall be carefully removed.

All plastering is to be thoroughly dry before varnishing is done.

FLOOR FINISH:(85)

All wood floors are to be finished as follows:

After the floors have been well scraped and cleaned and all other mechanics have completed their work apply two good coats of Lignophole (Mfg. by L. Sonneborn Sons, 114 - Fifth Ave., New York City) applied with hand brush well worked into wood.

WALL PAINT: (86)

All inside plaster walls and ceilings in the first and second stories are to be primed and then painted with two (2) coats of the best grade of inside oil paint. The priming coat on all plaster surface is to be Pitcairn Varnish Co.,"Tector" and the other two coats are to be the best grade of oil paint applied as per manufacturer's specifications. All painting on walls to be in light gray tints and as directed by Architect. Panels on Auditorium walls to be stipped in two colors in addition to gray tints specified.

All painting on panels that are treated for acoustics in Auditorium are to be painted to match other walls and as directed by Acoustical Contractor.

Also see paragraph(28).

SIGN PAINTING: (87)

The following sign painting will be required.

The doors leading to the Boys Toilet and the Girls Toilet are to have the word "BOYS" and girls toilet to have the word "GIRLS" painted on them.

The name of room to be painted on doors listed below:

BASEMENT PLAN:

1 door "MANUAL TRAINING" to corridor

1 door "BOYS GYMNASIUM" to corridor

1 door "GIRLS GYMNASIUM" to corridor

1 door "DOMESTIC SCIENCE" to corridor

FIRST FLOOR PLAN:

1 door "PRINCIPAL" to corridor

1 door "AUDITORIUM" to corridor

1 door "TEACHERS" to corridor

SECOND FLOOR PLAN:

1 door "LIBRARY" to corridor

1 door "NURSE" to corridor

1 door "BALCONY" to corridor

1 door "TEACHERS" to corridor

All other doors to be numbered as directed by Owner.

All letters and numbers to be black and same shall be 2" high.

WEATHER STRIPS: (88)

The General Contractor is to furnish and install metal weather strips for all windows.

The weather strips are to be Monarch, Chamberlain or Weather-

proof Products Co., metal weather strips or equal.

Double hung sash to have 1/8" x 7/16" No. 9 Zinc Rib Strip on top and sides, scribed into stops of frames.

Meeting rail to have interlocking, double hook strip, nailed to both sash. Sill strip to be heavy sinc rib projecting 7/16" into a close fitting groove in bottom of sash.

Casement sash to have an interlocking double hook strip on top, bottom and front side of sash with strip on hinge side.

WINDOW SHADES: (89)

The General Contractor need not bid on window shades, but bids will be received directly from Supply Houses or their representatives.

All outside double hung windows in the first and second stories, are to have shades. The shades are to be Dura Double Roll Canvas Shades or equal. The canvas is to be best quality heavy material in light gray color, except shades in Auditorium to be dark color as selected.

All outside casement or pivoted windows are to have single roll shades. All shades are to have best quality rollers, and all are to be put in place on the Window openings and left in good condition by the parties furnishing the shades.

The bidders must present samples of their materials at time that bids are presented.

STAGE SCENERY: (90)

Bids will be received on the following list of scenery.

One (1) Front or Drop Curtain

Two (2) Front or Tormentor Wings

One (1) Drapery Border

Two (2) Sky Borders

One (1) Parlor Scene

Four (4) Parlor Wings to match

One (1) Street Scene

The curtains to be painted on 2.85 scene canvas properly mounted on rollers and erected in place in a substantial manner. All wings, doors and set pieces are to be mounted on framework.

Painting to be done by Skilled artists, and with durable colors.

The designs are to be submitted to Owner and Architects for selection and approval at time of opening bids.

All frame work to be of good clear white pine lumber.

Furnish all hardware, ropes and cords, and support the suspended scenery in a substantial manner from the ceiling joist over stage, and provide proper fasteners for holding ropes and scenery in place.

Furnish one white curtain onr roller and properly supported for use as a screen for pictures.

GYMNASIUM EQUIPMENT: (91)

FIXED EQUIPMENT:

The Contractor is to furnish and install the following equipment in the gymnasiums and this is to be included in General Bid.

The following is the fixed equipment to be furnished

1 # 14 Horizontal and vaulting bar

1 # 39 Suspended Horizontal ladder

8 # 305 Stall Boards

4 # 86 Climbing poles

4 # 87 Climbing ropes

2 # 75 Hoisting rope for poles and ropes

6 Pr. # 77 Wall hangers for mats

2 # 156 locking wand rack

2 Pr. # 270 basket ball goals

2 Pr. # 169 Basket ball back stops.

PORTABLE EQUIPMENT

The General Contractor is no to include the Portable equipment in his general bid but is to bid on it under and "ALTERNATE" bid.

The following is the Portable Equipment:

4 #126 - 3 x 9 mats 2" thick # 6 duck

4 #126 - 4 x 6 mats 2" thick # 6 duck

4 #126 - 5 x 7 mats 2" thick # 6 duck

60 Pr. # 267-1/2 Maple dumbells (1#)

60 Pr. # 268-1/2 Maple Indian clubs (1#)

2 #135-B Steel cabinet for Indian Clubs

2 #141 -B Steel cabinet for dumbbells

6 doz. #143 3/4" x 42" maple wands

1 Pr.#215 portable volley ball stands

1 #217 volley ball net

Above equipment to be as shown in Catalog "L" of the Fred Medart Mfg. Company.

FURNITURE: (92)

All furniture is to bid on separately by the various Supply Houses, or the General Contractor may bid on furniture if he desires, but if so it must be in a separate bid.

All furniture is to be furnised and installed by the person or firm to whom the contract is awarded.

All fixed seats are to be fastened to floors in permanent manner, and all equipment reguiring plumbing, gas fitting and electric wiring is to be set up complete, making all necessary connections to the "roughing in" that will be done by other contractors. All furniture is to be stained and varnished in first class condition.

All numbers for Auditorium seats, school desks and chairs are taken from Superior School Supply Co., Catalog # 25. Bids will also be received on other manufacturers goods providing they are of similar design and quality.

AUDITORIUM CHAIRS: (93)

Heavy cast metal standards of sanitary design with closed in panels - legs 1-1/4" x 3/4". Enamel to be baked on with raised portions highlighted in gold bronze. All metal parts to be sanded and ground so as to provide a smooth sanitary surface, Color Gray.

VENEERS: All plys to be of birch and of equal thickness. Back to be at least 19-1/2" high reverse curve. Veneers to fasten to metal parts by bolts with cup washer.

ARMS: to be palin block arm free from scroll work which may catch clothing or pockets. Arms to have rounded edges- Chair similar to Superior No. 7.

Each row of seats is to be designated by letters placed on the end of the seats in a neat and conspicuous manner. The letters to be on ends of all seats along the isles starting with "A" at

row and running alphabetically to back of room. Each seat to be numbered with neat nickel plated number on back.

All seats in Auditorium to be finished in light gray color. 600 seats will be required for main floor and balcony in Auditorium.

INSTALLATION OF AUDITORIUM CHAIRS:

Chairs to be installed in concrete. Holes to be drilled at least 1-1/2" deep. Expansion shields of Brohart type are to be used of sufficient diameter to form firm and positive grip in hole. Electric current to be furnished by Board of Education.

Furnish five and one-half dozen (5-1/2 doz.) Bent wood chairs for use in Stage, Library, Orchestra pit and Boxes.

DESKS: (94)

The following rooms are to be equipped with Superior No. 32 single desks, size 1, or equal. Desks to have standards of plate[illegible] steel, wood to be maple, and the seats are to be standard brown finish.

Recitation Room # 1 - 42 seats No. 32
" " " 2 " " " "
" " " 3 " " " "
" " " 4 " " " "
" " " 5 " " " "
" " " 6 " " " "
" " " 7 " " " "
" " " 8 " " " "
" " " 9 " " " "
" " "10 " " " "
" " "11 " " " "
" " " 12 " " " "

LIBRARY TABLES:(95)

Four (4) # 329 tables 34" x 72" without drawers.

TEACHERS DESKS: (96)

Furnish Sixteen Teachers desks for Rooms 1 to 12 inclusive,

and for Library, Manual Training, Domestic Science and Principal.

These desks to be No. 49, made of selected white oak finished as directed.

TEACHERS AND CLASS ROOM CHAIRS:(97)

Furnish Sixteen N-5674-1 Chairs.

These chairs to be quartered oak finished as directed.

OFFICE FURNITURE: (98)

All to be quartered white oak finished in light office golden oak finish.

Furnish One (1) # 860 Roll Top Office desk 60" long, 34" wide.

One (1) #843 typewriter desk

Two (2) #26-6 Office chairs

One (1) #26-5 Office stenographers chair

Five(5) #26-1 Plain Chairs

One (1) #2062 Filing case.

(99)
DOMESTIC SCIENCE EQUIPMENT:

All Domestic Science equipment is to be furnished complete as listed below. The numbers are taken from Kewanee Mfg. Co., Catalog No. 13 and 14, and if other material is bid on it must be equal to those specified.

Five (5) Domestic Science Tables No. 1611 - top 42" x 72" built white birch 1-1/8" thick. Table of solid oak. To be finished with two stoves, similar to Kewanee No. 32. Equipped for gas, hot and cold water.

One # 1618 Demonstration Table

One # 1627 " " 1 flour bin and 1 cabinet.

MANUAL TRAINING: (100)

One (1) #1925 Tool Cabinet Kewanee Catalog.

Five (5) # 660 Ten drawer Double Bench, as shown in E.H. Sheldon & Co., Catalog.

INDEX FOR GRADE SCHOOL BUILDING

ELECTRICAL SPECIFICATIONS

SPECIFICATIONS FOR ELECTRIC WIRING

FOR

A GRADE SCHOOL BUILDING FOR A THESIS IN ARCHITECTURE

UNIVERSITY OF KANSAS.

GENERAL CONDITIONS FOR ELECTRIC WIRING: (1)

The building is to be brick and reinforced concrete construction and thin partitions shown on plans are to be of Metal Lath on Metal studding. The fact of a contractor submitting a bid will be construed to mean that the person bidding, bids and agrees to carry out all the provisions set forth in these specifications and drawings.

BONDS: (2)

Each contractor to whom a separate contract is awarded will be required to give the Owner two bonds (a performance bond and a contract bond) as described below, and both must meet with the approval of the Owner.

CONTRACT BOND: (3)

The contract bond is to be for the full amount of the contract price with a licensed surety company as surety, conditioned on the full performance of the contract in accordance with the Architects drawings and these specifications.

STATUTORY BOND: (4)

The statutory bond shall be for the full amount of the contract price in all respects in conformity to the law, to protect the Owner from all mechanics' labor, material supply men, and sub-contractors liens. No work shall be done until this condition is complied with, unless it is otherwise specifically mentioned in the agreement.

The Owner is to file this bond with the Clerk of the District Court, in the County in which the building is to be erected.

PAYMENTS: (5)

The Contractor is to furnish the Architect with a brief

estimate of the cost of the building, showing all principal items with contractors profit included, so that the total itemized estimate equals the contract price. The Architect will use this as a basis for making monthly estimates for payments on the contract.

On or about the first day of each month as the work progresses the Architect, will make an estimate of the materials and labor used in the building and of material on the building site and will issue certificate to the Owner for 90% of this amount, less all previous payments and the Owner will pay this amount to the Contractor. The final payment will be made within 15 days from the date of full completion of the contract and the acceptance of the building.

SCOPE OF WORK: (6)

The aim and object of these specifications is to include all that is necessary for the complete wiring system to each and every outlet throughout the building, including service switches, switches, fixtures and lamps, and in fact everything necessary to make a complete electric installation. All of the above to be done in accordance with these specifications and plans and in a nanner satisfactory to the Architect.

Any error or omissions which may be discovered by the contractor or any questions effecting the interpretation of these specifications, must be submitted to the Architects for correction and adjustment. Work material, or apparatus not particularly described herein, or called for, but reasonably implied or evidently necessary to complete the entire electrical work as a whole must be furnished by the contractor without extra charge as if fully specified and described.

CODE RULES: (7)

The work shall be in accordance with the rules of the National Board of Fire Underwriters and the local department having jurisdictio

All necessary permits shall be obtained by the contractor at his expense and delivered to the Architect before the work is accepted.

PERMIT AND LICENSES: (8)

This Contractor shall give to the proper authorities all notices as required by law, relative to the work in his charge, obtain all official permits and licenses as may be necessary to the true and faithful performance of the work and which may arise incidental to the fulfilling of these specifications.

PLANS: (9)

The location of main switches, cabinets, light outlets, motor outlets, switch outlets, clock outlets, and receptacle outlets are indicated on the floor plans. These plans are not intended to give complete details in regard to location of conduit, etc. Exact locations are to be determined by actual measurements at the building and to be subject to the approval of the architect. The contractor must examine the building plan thoroughly with reference to the heating and plumbing work, and run his conduit and wires as not to interfere with their work.

GUARANTEE: (10)

The contractor shall guarantee to make good any defects in his work which develops within one year from date of acceptance.

TEST: (11)

On completion of the work the installation shall be entirely free from ground and short circuits.

CUTTING & REPAIRING:(12)

The Contractor shall do all cutting necessary to the proper installation of his work and shall repair any damages done by him or his workmen employing the services of the Contractor whose work is damaged when so directed by the Architect.

OUTLETS: (13)

At each and every switch, wall, ceiling receptacle or other outlet shown on plans, install a metal outlet box of a style most suitable for the purpose of the outlet. All outlets must be rigidly secured in place by approved methods and those intended for fixtures shall be provided with fixture studs. All light outlets shall be provided with open covers having drilled and tapped ears.

INSTALLATION OF WIRES: (14)

All conduit runs, except where buried in cement or concrete must be rigidly held in place with pipe straps. All bands and offsets shall be avoided where possible and when same are made, and approved hickey, similar to the "Lakin" or a conduit bending machine shall be used. The use of a pipe tee or vice shall not be permitted. All conduit deformed or crushed in any way shall not be installed and must be removed from the building without delay. All conduit must have an inside diameter of at least 3/8" and no bend shall have less than 3-1/2" inside radius.

Conduit shall be cut with a hack saw. The ends must be square after cutting and conduit shall be reamed after threading. Conduit must be securely fastened to all outlet boxes with locknuts and bushings of approved make, care being exercised that the full number of threads project through for the bushings. Conduit shall be joined with approved conduit couplings, no running threads will be permitted.

Before pipes are covered, they must be fished by the contractor with steel fish tape, to satisfy the Architect that no obstruction is in the pipes. However, no wire or string shall be left in the pipes, in order to facilitate drawing in of wires. All joints in conduit must be leaded and made water-tight. No wires shall be installed until all work which might cause damage to the conduit or wires has been completed. Conduit must be kept away from hot water pipe,

steam pipes and flues at least six inches, Conduits shall be plugged and kept clean and dry during installation. System must be thoroughly and effectively grounded by a ground connection of approved size.

CONDUCTORS: (15)

Conductors shall be continuous from outlet to outlet and no splices shall be made except in outlet boxes. No wire smaller than No. 14 B & S gauge shall be used and for all circuits of 100 ft. or longer, No. 12 B & S gauge shall be used. All conductors of No. 8 B & S gauge or larger shall be stranded. Wires shall be of sufficient length at outlets to make connections to apparatus without straining connections. Splices shall be made both mechanically and electrically perfect, and proper thickness of rubber and friction tape shall then be applied.

POSITION OF OUTLETS: (16)

Unless otherwise directed or indicated, plug receptacles, shall be located 4'-0" above finished floor, wall brackets 6'-6" and wall switches 4'-0" above finished floor. Contractor will consult heating & plumbing contractor and place plugs so as not to interfere with his work. All outlets shall be centered with regard to paneling, furring, trim, etc., and any outlet which is improperly located on account of failure to take account of above mentioned conditions must be corrected at contractor's expense. All outlets must be set plumb and extend to finish of wall, ceiling or floor, as the case may be, without projecting beyond same.

FEEDERS: (17)

The size of feeders shall be according to the size specified. The contractor shall submit for the Architect's approval a sketch of the arrangement of feeders, circuits, etc., together with the size of each before such work is installed. Arrangement of switches, outlets service feeders, etc., shall be installed in every particular in

accordance with the requirements of the Architect. This contractor shall make all connections necessary to complete installation from service connection to each and every outlet.

MATERIALS: (18)

All materials used in carrying out these specifications shall be acceptable to the National Board of Fire Underwriters and the local department having jurisdiction. Where no make or brand is specified or where the expression "equal to" is used, the contractor must notify the architect of the make or brand to be used and receive his approval before any of said material is installed. Where a particular brand or make is distinctly specified, no substitution will be permitted.

All rigid iron conduit to be enameled.

The insulation of all conductors shall be rubber with protecting braids, which shall be Habirshaw or equal wire.

Outlet boxes shall be standard pressed steel knockout type and shall be enameled.

LOCAL SWITCHES & PLUG RECEPTACLES: (19)

Local wall switches shall be two-button flush type, Bryant-Perkins or equal, completely enclosed in a box of non-breakable insulating material with brass beveled edge cover plate.

Plug receptacles shall be of the Screw Plug type with bevelled edge plate (Bryant No. 1708) or equal. Stage floor plug to be duplex flush receptacle equal to Bryant Perkins #125. All lamp sockets used in fulfilling these specifications shall have an approved rating of 660 watts, 250 volts. All switch and plug plates to be # 9 Dull Brass finish as furnished by Russell-Irwin Hdw. Co., to match hardware in building.

PANEL CABINET: (20)

All panel cabinets shall be of code steel thickness, Standard

gutter cabinet boxes.

PANEL TRIM & DOOR: (21)

The panel trim and door shall be Frank Adams Standard Steel Fronts, flush type. A directory of circuits and outlets served by panel shall be enclosed in glass with metal frame, mounted on inside of panel doors.

Panels must be equal to Frank Adams Elec. Mfg. Co., type cut #KP3L, except main lighting and power panel to be special and have extension for meter.

FUSED KNIFE SWITCHES & FEEDERS: (22)

All fuses for branch circuits shall be no more than ten amperes capacity. The contractor shall furnish the Owner with all fuses for complete installation.

All individual knife switches shall be Frank Adams type or equal.

ELECTRIC LIGHT WIRING: (23)

The circuit wiring shall be installed as a three wire 220-110-220 Volt single phase, 60 cycle A-C system. The circuits shall be grouped according to the schedule given in these specifications. All wiring shall be installed in rigid iron conduit.

MAIN LIGHT FEEDERS: (24)

From Main Panel in boiler run three #000 DBRC stranded lead covered wires in 2" conduit to a point approximately 20±0"above grade on city service pole where shown terminating with a weather proof cap.

LIGHT SUB-FEEDERS: (25)

From Main panel to panel "A" run three # 8 RC wires in 1" conduit.

From Main Panel to panel "B" run three # 4 DBRC wires in 1-1/4" conduit.

From Main panel to panel "C" run three # 5 DB wires in 1-1/4" conduit.

From Main panel to panel "D" run three # 4 DBRC wires in 1-1/4" conduit.

MAIN PANEL : (26)

Main panel Sub-feeder switches:

One 3 pole 30A fused knife switch to Panel A.

One 3 pole 60A fused knife switch to Panel B.

One 3 pole 60A fused knife switch to Panel C.

One 3 pole 60A fused knife switch to Panel D.

Main switch to be 3 pole 200A fused knife switch

SCHEDULE OF OUTLETS: (27)

Panel "A" located in Basement Corridor

Cir. # 1, 2 c.o. Girls toilet, 2 c.o. Domestic Science, 6 c.o. Girls Gymnasium.

Cir. # 2, 2 c.o. Boys toilet, 2 c.o. Manual Training, 6 c.o. Boys Gymnasium.

Cir. # 3, 3 c.o. Corridor, 1 c.o. supply room, 1 c.o. Janitors room.

Cir. # 4, Extra

Cir. # 5, Extra

Cir. # 6, Extra

Panel "B" located in Corridor on First Floor.

Cir. # 1, 4 c.o. class rooms # 1, # 2, # 3, # 4, # 5, # 6.

Cir. # 2, 3 outlets in Corridor, 1 outlet entry, 1 outlet stair landing.

Cir. # 3, 4 c.o. in corridor - center.

Cir. # 4, 1 c.o. Teachers room, 1 c.o. Principals room.

Panel "C" located on Stage

Cir. # 1, Extra

Cir. # 2, Extra

Cir. # 3, Eight foot light outlets (white)

Cir. # 4, Seven foot light outlets (red)

Cir. # 5, Seven foot light outlets (blue)

Cir. # 6, 1 c.o. under stage, 2 c.o. in dressing rooms above stage.

Cir. # 7, 5 outlets in Orchestra pit

Cir. # 8, Stage Floor plug.

Cir. # 9, # 10, # 11, Special outlet upper part of stage for border lights (about 12" from ceiling.)

Cir. # 12, # 13, # 14, Special outlets back of Proscenium Arch for strip lights (4'-0" above floor.)

Cir. # 15, 4 outlets under Balcony

Cir. # 16, # 17, # 18, ceiling lights in Auditorium.

Panel "D" located in Corridor Second Floor.

Cir. # 1, 4 c.o. Class Rooms # 7, # 8, # 9, # 10, # 11, # 12.

Cir. # 2, 2 c.o. Library

Cir. # 3, 3 c.o. in Corridor.

TELEPHONE:(28)

From three outlet boxes in offices run 3/4" conduit to rear of building for telephone service.

FIXTURES & LAMPS: (29)

A detail of fixtures to be used is shown on plans. These fixtures are lettered and this letter corresponds to the fixture to be used at each particular outlet. The size of lamp to be used is shown at each outlet. Shade to be size to fit lamps called for. This Contractor will furnish and install complete, fixtures and lamps according to these shown on plans. Other fixtures than those shown on plans may be substituted but detail of fixtures must first be submitted to the Architects for approval.

Border lights to be as shown in 2- 8'-0" panels bolted together and hook provided for rope. Strip lights to be 2'-6"-0" panels with hook omitted. Means to bolt strip lights to wall so

as to reflect toward center of stage must be provided as directed by Architect.

FOOTLIGHTS: (30)

Install lights in foot light trough according to detail. Lights to be on three separate switches from cabinet "C" and lamps to be in three colors, red, white and blue.

CLOCKS: (31)

All clocks to be of the Standard Elec. Time Company make, Monadnock Bldg., Chicago, Illinois or equal, and to be installed in in rooms according to following schedule:-

Basement Floor Plan:

Boiler Room

Boys Gymnasium

Girls Gymnasium

Manual Training

Domestic Science

First Floor Plan:

Class Room # 1

Class Room # 2

Class Room # 3

Class Room # 4

Class Room # 5

Class Room # 6

Principal's Office (Master Clock)

Teachers Room

Second Floor Plan:

Auditorium

Class Room # 7

Class Room # 8

Class Room # 9

Class Room # 10

Class Room # 11

Class Room # 12

Teachers Room

Nurse's Room

Library

The apparatus which must be included in this contract is as follows:

1 Master Clock or regulator in office

1 4 Circuit Program Clock:

1 Automatic charging device

18 Secondary Clocks

18 2-1/2"bells or buzzers, bells in gym, and buzzers elsewhere

3 6" wood box gongs

1 19 point combination push button and distributing board.

1 transformer

1 rectifier

MASTER CLOCK:(32)

Furnish and install in office where shown, one 60 beat self winding master regulator pendulum, guaranteed to regulate within a variation of thirty seconds per month. The master is to be equipped with circuit closer, necessary relays, setting keys, switches etc., for operating each circuit separately if desired. The case is to be similar to that shown in Fig. # 580, List # 32 of the Standard Elec. Time Company's Catalog # 33 and to be of quartered oak and finished to match the surrounding woodwork.

PROGRAM CLOCK: (33)

Furnish and install in the Master Clock case, one four-circuit, minute interval, automatic program clock, fitted with automatic attachment for silencing bells at night, Saturday, Sunday or any twelve hour period desired, to have a carbon contact relay, push button and switch so arranged that each circuit can be operated by hand independent of the Master or Program clocks.

There are to be 27 secondary clocks. These to have 12" dials, black roman numerals on white surface. The cases are to be of oak of a design, similar to Fig. # 653 list 334. Secondary clock outlets

are to be 10'-0" from floors except outlet in Auditorium which is to be 36" from ceiling.

COMBINATION PUSH BUTTON & DISTRIBUTING BOARD: (34)

Furnish and install where directed in Principal's office one 19 point combination push button and distributing board, one point for each bell and gong equipped with four bussbars, one each for bell circuit. Provide a plug or a jump screw as means of changing any bell or gong from one circuit of the program to the other without the use of tools or changing of the wiring. This board to be of quartered oak and finished to match the master and program clock.

CONDUIT WORK & WIRING: (35)

All conduit shall be of the same as that used for electric light work on the building and shall be of sufficient size to take all necessary clock, bell,gong, and battery wires as specified by the manufacturers.

INDEX FOR GRADE SCHOOL BUILDING

PLUMBING & HEATING SPECIFICATIONS.

SPECIFICATIONS FOR PLUMBING & HEATING

FOR

A GRADE SCHOOL BUILDING FOR A THESIS IN ARCHITECTURE

UNIVERSITY OF KANSAS.

GENERAL INSTRUCTIONS FOR PLUMBING INSTALLATION.

DEFINITION:(1)

Plumbing as herein specified is hereby defined to include the use of all pipes, fixtures and appurtenances thereto, and all connections therewith, and the laying of same underground and placing the same in buildings or structures, for the purpose of conducting or distributing water in any premises, or building or conducting and carrying of any water, gases, vapors or water into drains or sewers or ventilating drains, fixtures or traps in any building and all connections made for such purposes with the public water pipes or sewers maintained in the alleys, and public places in said city, or with private water and private sewers or drains.

OUTSIDE DRAINS: (2)

All outside drains shall be formed of good, whole, sound, well glazed stoneware, socket pipes. All connections of one line drain pipes with anchor shall be made with Y branches, one-eighth bends. All drains where practicable shall be laid at least two feet below the surface of the ground, the fall to be not less than one foot in one hundred feet and as much more as possible; the pipes to be put together with cement, and to be made water, gas and air tight, the interior of each piece of pipe and the last joint in sight is to be made perfectly smooth before the next length is laid.

INSIDE DRAINS: (3)

That portion of the house drain inside of the wall and under neath the building, and for three feet outside of foundation wall shall be constructed of what is known to commerce as extra heavy cast

iron soil pipe and extra heavy fittings. House drains shall be securely attached to the walls not less than five feet apart and laid in trenches of uniform grade or suspended from floor construction by strong iron hangers. Drains and soil pipes to have a uniform fall of not less than one-fourth inch to one foot toward the sewer. Changes in direction shall be made with Y branches and one-eighth bends, and all drains to be accessible when practicable.

SOIL PIPE & CONNECTIONS: (4)

Soil pipes receiving the discharge from one or more water closets, shall be extra heavy cast iron pipe same as specified for drains, and not less than four inches in diameter, and to continue full size inside of building and to point above roof, and to a height of not less than six inches above fire wall, if roof is flat and at least two feet above or ten feet away from any window or opening of any adjoining building. All vertical soil pipes shall be supported by strong iron hangers. All joints shall be made with oakum and run with molten lead thoroughly caulked.

All connections of lead pipes shall be made of extra heavy brass ferrules (according to size of pipes used for drains) properly wiped joints and caulker with iron pipes. Waste pipes from all fixtures shall be lead or extra heavy cast iron.

FLOOR DRAINS: (5)

No floor drains except these with approved back pressure valves with a seal of not less than three inches will be permitted to have direct connection with the sewer.

VENT PIPES: (6)

Vent pipes shall be carried up inside of the house and supported the same as soil pipes. Water closets five to twenty feet from main stack, or where there is more than one on same stack, shall be re-vented with not less than two inch lead pipe, and be

carried up as high as water line of bowl. The traps of all other fixtures shall be vented with pipe the same sizes as the waste pipe. Pipe vents from two or more fixtures, shall be connected at least one foot above the highest fixtures. Vent pipes must increase in size accordingly to the number of fixtures at least one-fourth inch for each additional fixture.

A vent may be connected to a soil pipe not less than five feet above the highest opening. All vent pipes shall be run as near as possible, and forty-five degree elbows shall be used at all times when practicable; not more than thirty feet of 1-1/4 inch pipe can be used for a fixture, and nore more than thirty feet of 1-1/2 inch pipe can be used when venting closets. Galvanized wrought iron pipe and galvanized iron fittings, extra heavy cast iron or lead pipe (weight to be known as light) may be used for ventilators. Connections of lead pipes and the wrought iron pipes shall be made with brass and properly wiped joints.

Each and every fixture having a waste pipe shall be a separately and independently trapped with water sealing trap, placed as near fixtures as practicable, and each trap shall be protected from siphonage or air pressure by a special vent pipe. All bath tubs traps shall be of the drum pattern and when used in buildings with single floor shall be at least four by eight inches and when used in buildings with double floors, cement or tile floors said drum traps shall be at least four by ten inches. Each drum trap shall have a water seal of at least two inches in depth. Same to be installed so as to prevent gases from passing the trap. Traps used in connection with laundry trays shall be the same as traps used for bath tubs. Said traps to be vented from waste line of same by a lead Y branch. Said branch vent should never be taken off waste over twelve inches from traps and never below the water seal of traps

and note more than eighteen inches horizontal run of vent below water line of fixture, same to be lead pipe twelve inches above traps. Traps for shower bath shall be governed by the same as that of floor drains, or other suitable shower bath traps.

Vent pipes must be constructed of galvanized pipes, with galvanized malleable or heavy cast iron screwed fittings, or extra heavy soil pipe with extra heavy fittings. Each fixture to group of fixtures must have stop and waste controlling cold water supply and drain on hot water. On two or more story buildings waste pipes, must be in place to supply fixture on upper floors and be tested and inspected at same time of house drain and vents. (Note:- Lavatory waste only may be connected into toilet vents.

SIZE OF MAIN WASTE PIPES: (7)

The main soil or waste pipe constructed to convey sewerage from the building shall not be less than four inches in diameter. There shall not be connected to a four inch sewer or main waste or house drain to exceed thirty ordinary plumbing fixtures, and to a five inch pipe not to exceed eighty fixtures, and to a six inch pipe not over one hundred and fifty fixtures.

VERTICAL LINES OF VENT & WASTE PIPE: (8)

Building shall have at least one main stack or vertical line of pipe not less than four inches in diameter, run full size through the roof at least 18 inches. All vertical lines of waste shall at a point five feet above the highest inlet to said line be known as vent lines. Any vent lines may be connected with another vent line of smaller capacity. All lines of vent shall be run either through roof or made to intersect other lines that are open to the atmosphere above the roof.

CLEANOUT AND TRAP SCREW FERRULES:(9)

All cleanout openings shall be of brass screwer to brass and set in graphite.

Brass traps screw cleanouts with screwed covers shall be provided in each system of plumbing as follows:

At the bottom of each vertical line of waste pipe that runs to a height of one or more stories, in every horizontal line of sink waste that is run five feet from the mainstack, in all horizontal lines of waste, 15 feet apart. In horizontal sink waste run underground every ten feet apart, and all sink waste must have a cleanout plug in each change of direction, in each independent urinal waste, and in each trap (except water closet trap.)

HANGERS, RESTS AND SUPPORTS: (10)

All horizontal lines of pipeing above ground must be constructed to a practically uniform grade of not less than 1/4 inch fall to each foot and suspended by neat, durable hangers of iron, steel or brass, placed not to exceed five feet apart same to be in place when roughing in inspection is called for. Horizontal lines of lead work shall be supported under its full length, by permanent supports in such manner as to prevent sagging of lead.

Vertical lines of piping shall be supported on metallic and heavy cast iron rests, on each floor, and must be plumb. Each vent or waste, also supply stub run through the rough floor or wall, must be securely stayed in the respective position and be at right angles with the floor or wall to which it runs. Each vertical stack shall be permanently stayed in position just below roof line.

JOINTS HOW MADE: (11)

SOIL PIPES: All hub and spigot joints of cast iron shall be caulked with 1/3 oakum and 2/3 molten lead, and all other caulked joints shall be done in this manner.

LEAD TO LEAD OR LEAD TO BRASS: All joints required to unite lead to lead, or lead to brass shall be made by means of a wiped joint composed of not less than two parts lead and three parts tin, and practi-

cally applied.

LEAD TO CAST IRON: All joints required to unite lead to cast iron shall be made first by uniting the lead to the brass then caulking or screwing the brass to the cast iron by means of a standard thread made to intersect a fitting manufactured for the purpose of receiving the same.

BRASS TO CAST IRON: Connections between brass and cast iron shall be either caulked or screwed.

RULES: (12)

No vent shall run directly horizontal from a strap over 18"

All upper ends of soil pipes and vent pipes must be finished with lead flashings.

Upper ends of vent pipes must be above the top of the windows on same side of house.

Rubber ell shall not be permitted on closets or other vents.

All main and branch vents shall be in when inspector is called.

Double hubs or offsetts shall not be permitted on waste pipes.

Cleanouts must be in when rough inspection is called for.

The horizontal waste lines over 20 feet from stack which runs through the roof, must continue through the roof.

No combinations ferrules or solder union shall be used in connection with waste or ventilation work.

All ventilation branches or back pipes shall be of lead at the lowest point where same comes through the wall.

No back air or vent pipe shall intersect another at a point less than five feet above floor line.

The discharge or waste from any fixture shall not pass through more than one trap between itself and sewer.

Waste from any fixture shall not intersect any closet bend at heel.

All water closets shall be vented in the upper portion of bends below the floor lines.

The discharge from vats, soda fountains, ice boxes and other combined and assembled fixtures shall be subject to the approval of the inspector of plumbing.

Plumbers shall be governed by the following table in construction of drainage and ventilation in all buildings.

	Waste	Vent	Trap
Water Closets, not less than	4 in	2 in	4 in
Wash basins, not less than	1-1/4	1-1/4	1-1/4
Sink,not less than	1-1/2	1-1/2	1-1/4
Slop sink, not less than	2	1-1/2	2
Urinal, not less than	1-1/2	1-1/2	1-1/2
Drinking fountains, not less than	1-1/4	1-1/4	1-1/4
Floor drains	2		

Not more than one fixture, as hereintofore, specified shall be permitted to be connected to a 1-1/4 inch waste or vent pipe.

When more than two and less than ten fixtures are to be connected having size of waste or vent pipes above 1-1/4 inch and under 2 inch said pipe shall be increased one size for each fixture until 2" size is reached, not more than 20 fixtures on 3" pipe.

All brass ferrules used must be known as extra heavy.

Size	2 in	3 in	4 in
Length	4-1/8	4-1/8	4-1/4
Weight	13-1/8 oz	21 oz	30-3/8 oz.

All pipes of cast iron shall be sound, free from holes and of uniform thickness and shall not be less than the following relative weight:

Extra heavy

2 in pipe 5-1/2 pounds per foot

3 in pipe 9-1/2 pounds per foot

4 in pipe 13 pounds per foot

5 in pipe 17 pounds per foot

6 in pipe 20 pounds per foot

7 in pipe 27 pounds per foot

8 in pipe 33-1/3 pounds per foot.

All lead pipes shall be known as light, not less than the following prescribed weight.

1-1/4 in pipe 3 pounds per foot

1-1/2 in pipe 4 pounds per foot

2 in pipe 5 pounds per foot

4 in pipe 8 pounds per foot

Lead bends for water closets shall not be less than 1/8 inch in thickness.

Sheet lead must weigh four pounds to the square foot.

Size	2 in	3 in	4 in
Length	3-1/4	3-1/4	3-1/2
Weight	17-1/2 oz	30 oz	43-3/4 oz

All brass solder nipples (either male or female) must be what is known to the trade as extra heavy, and not less in dimensions and weight than shown in the following table

(SOLDER NIPPLES, FEMALE)

Size	1-1/4	1-1/2	2
Length	3	3-1/8	3-1/4
Weight	8	11-1/2	17-1/4

(SOLDER NIPPLES, MALE)

Size	1-1/4	1-1/2	2
Length	3-1/4	3-1/2	3-5/8
Weight	9 oz	12 oz	16 oz

All traps must be true with respect to their water levels. and be well supported.

In testing the roughing in said test shall be made so as to include at one time the house drain and branches, all vertical and horizontal soil, waste, and vent lines, and all branches, there from a point above the surface of finished floors, and beyond the face of finished walls and partitions. If the cellar work or any part of the work is to be tested separately there must be a head of water equal to height of finished stack. Special provisions must be made to include all points and connections in at least one test.

The vent extensions of main soil lines shall be extended full size through the floor, and shall not be exposed to the outer air less thab 14 inches nore more than 18 inches. Extensions of other vent lines shall be made in the same manner and not be exposed to the outer air more than 24" nor less than 18".

Drains from any ice box above the first floor, shall be made with 2 inch pipe, and extend full size through the roof. It may be constructed of soil pipe.

Each box shall have placed on floor an open receptacle and not less than 4" x 8" x 2" high to receive drip.

This receptacle shall waste through a 1-1/4" pipe, 4 x 8 drum trap.

The waste line shall have an open receptacle between its lower and the house drain.

All horizontal runs for ice box waste shall have proper cleanouts at its upper end and cleanouts not to exceed 16 feet apart.

All lead pipes used for vent or water lines must be drifted to their respective size.

Cleanouts on 4 inch stacks and runs must not be less than 4 inches in diameter.

PLUMBING INSPECTIONS & TEST: (13)

Each and every system of plumbing, drainage and ventilation shall be inspected and approved by the architect or his assistant before said building in which work is being or has been constructed shall be occupied. When rough work of drainage and ventilation within any building and before said work shall have been covered, the plumber of firm doring such work shall notify the plumbing inspector in wiring or otherwise, that said work is ready for inspection. No inspection shall be called for until work is ready.

All outside or inside drains, soil, waste or vent pipes shall not be covered from view or be concealed until after the work has been tested, examined and approved by the architect or plumbing inspector. The whole system of the inside drains, soil,waste, and vent pipes shall be filled with water or subject to air pressure of ten pounds to the square inch. The architect shall be notified by the plumber when the work is ready for inspection, and said plumber shall prepare the whole system for inspection make the test in the presence of the architect.

PLUMBING SPECIFICATIONS.

SCOPE OF WORK: (14)

The Plumbing Contractor is to furnish and install a complete plumbing system in proposed Grade School Building. It is to consist of all fixtures shown on plans or called for this this specification and their connections with the sewer and water system as hereinafter specified. Run hot and cold water pipes in pipe trench below first floor as much as possible.

COLD WATER SUPPLY: (15)

Take of 2" supply to building from city water main and furnish and install 2" meter, subject to approval of city water company, where shown on plans. Continue 2" to each toilet room,

supplying each water closet with 1" pipe,. At the end of supply to each toilet room install a 2" air chamber 8'-0" long and properly capped.

Take off 1" supply to boilers and hot water tank, Supply all single fixtures with 1/2" pipe. Run 3/4" pipe to first floor drinking fountains and continue 1/2" to second floor drinking fountains. Run 1/2" supplies to each of 7 sill cocks as shown on plan.

HOT WATER SUPPLY:(16)

The hot water storage tank in Boiler Room is to be a 315 gallon Black Steel Standard Storage Tank, stock #438 Ideal Fitter, American Radiator Co., on suitable standards of 1-1/2" black pipe.

Connect hot water storage tank to a #06 Ideal Hot water Supply Boiler, making direct connection to hot water supply piping at top of tank. Place drain at low point of Hot water system. Connect smoke pipe to boiler stack.

Each branch of hot and cold shall be provided with a stop and waste cock at the base of all rizers. Connect the wastes and run 1/2" pipe to nearest open drain.

Every fixture supplied with hot and cold water must be provided with compression stop cocks having stuffing box and wheel handle with milled edges. Particular care must be exercised in the erection of the various water supply pipes in the building to maintain an even spacing and alignment throughout their entire lengths. All water pipes and fittings to be galvanized wrought iron. All supply pipes to be suspended in a neat and workmanlike manner with strong cast combination hangers at points not more than 10 feet (10'-0") apart. All pipes to be run as close to ceiling as possible.

HOT WATER RELIEF VALVE: (17)

Furnish and install V & K hot water relief valve in hot water supply system and drain to floor drain.

FIXTURES: (18)

All fixtures included in this specification are to be furmished and set by the Plumbing Contractor in a neat, finished and uniform manner, making connection with all supply, waste, soil and vent pipes, as hereinbefore specified or as may be directed.

The following list of fixtures are to be installed complete as shown or described in catalog mentioned.

Other makes of fixtures may be used subject to the approval of the Architect but they must be equal in quality and furnish the same accommodation as fixtures herein listed. In substituting fixtures a complete list must be furnished the Architect with plates and descriptions covering all details.

LIST OF PLUMBING FIXTURES:(19)

BASEMENT PLAN:

Outside

7 - 1/2" sill cocks

Boiler Room

1 - hot water storage tank

1 - " " supply boiler

1 - floor drain

Janitor's Room

1 - slop sink

Boys Toilet

8 water closets

8 toilet paper holders

4 urinals

4 shower heads

1 shower drain

1 shower stall curtain

Domestic Science

1 sink - 2 drain boards

Manual Training

1 sink

Girls Toilet Room

10 water closets

10 toilet paper holders

4 shower heads with needle showers

4 shower drains

4 shower stall curtains

FIRST FLOOR PLAN:

Corridor

2 drinking fountains

SECOND FLOOR PLAN:

Corridor

2 drinking fountains

FIXTURE SPECIFICATIONS.

SHOWER & FLOOR DRAINS: (20)

Shower drains and floor drains to be # 2 "Signet" floor drains perforated Brass top as manufactured by the Crampton-Farley Brass Co., Kansas City, Missouri.

WATER CLOSETS: (21)

All water closets to be the Clow "Sifona" vitreous syphon jet water closet with extended lip; square back birch mahogony crescent shaped seat with N.P. bar hinges and reinforcing ring as shown on Plate M-3272 Clow's Plumbing Fixture Catalog. (Bowl to weigh at least 54#,) for schools etc., Same to be equipped with a Royal Flush Valve # F-55 - Style J as shown on page 18, catalog "F" Sloan Valve Company, Chicago, Illinois.

VENTILATING HOODS: (22)

Each water closet stall is to be equipped with a nickel-

plated ventilating hood as shown in Plate M-3140 Clow's Catalog as above. The plumbing contractor is to furnish measurements for cutting holes in marble backs of stalls.

URINALS:(23)

Urinals to be 18" class "B" as per Plate M-3412 Clow's Catalog as above. Same to have iron Automatic tank enameled inside and outside, set to flush every three minutes. Tank to be concealed in utility corridor as provided. All exposed piping to be nickel plated. Furnish cast iron extra heavy 2" half "S" trap for caulking. Urinals to be 2 stall.

DRINKING FOUNTAIN:(24)

The drinking fountains to be complete as shown and described in Plate M-4535 Clow Catalog and each fountain is to be fitted with air chamber and stop cock in pipe.

LAVATORIES:(25)

Lavatories to be enameled iron lavatory size 17" x 19" as per Plate M-4245 Clow's Catalog as above. Each to be supplied with N. P. self closing hot and cold water faucets with stop cock and air chamber in supply to each lavatory.

SINKS:(26)

Sink in Domestic Science Room to be 20" x 36" complete as shown in Plate M-4858 Clow's Catalog and to have 2 - 20" x 18" drain boards as per plate M-4953 Clow's Catalog. Sink in Manual Training Rpp, tp be same as above without drain boards.

SHOWERS: (27)

Showers in Boys Shower Room to be Plate - P-2870, Standard Sanitary Mfg. Co., Catalog "P" with gooseneck cast brass ball joint 5" shower head with removable face. Supply valves with style "B" China Cross handles and 1/2" supplies to wall. (See faucet specifications.)

Showers in Girls Shower room to be Plate P-2784 except to have/shower head as specified for boys shower above and omit curtain support and curtain.

SLOP SINK: (28)

Slop sink to be Clow's M-5100 - 22" x 20" Class "B" with Hot and Cold Water bibbs (one for hose) as specified below. Same to be equipped with spring rim plate M-5115.

SILL COCKS: (29)

All sill cocks to be special make to waste to outside of building to protect against freezing and as manufactured by the Western Mfg. Co., Oskaloosa, Iowa.

FAUCETS: (30)

All faucets shall close with pressure and shall have all working and wearing parts contained in a removable unit, which unit shall be standardized and interchangeable in all faucets, Working and wearing parts shall include the seat, washer, stem, and nut or internally threaded sleeve of same to be equal to the "Quartern" as manufactured by the Chicago Faucet Co.,

DOWNSPOUTS: (31)

Furnish and erect complete in place with caulked joints same as specified for soil pipe ten 4" and two 6" cast iron soil pipe down spouts where shown. At roof furnish and place a No. 400-B series Josam double Drainage Roof Drain for each down spout.

Carry down spouts on inside of wall in chases provided by General Contractor and run to outside and connect up to drain tile. Drain tile to be as shown on plans and run to street as shown, all to be furnished and laid by Plumbing Contractor.

PAINTING: (32)

Paint all exposed iron plumbing pipes both sewer and water with one good coat of aluminum paint. This to include H.W.Storage tanks. Hot water heater and smoke pipe to be given one good coat of

black asphaltum paint.

HEATING SPECIFICATIONS.

BONDS: (33)

Each Contractor to whom each Contract is awarded, will be required to give the Owner two bonds (a contract bond and a statutory bond) as described below, and both must meet the approval of the Owner.

CONTRACT BOND:(34)

The performance bond is to be for the full amount of the contract price with a licensed Surety Company as surety conditioned on the full performance of the contract in accordance with the Architect's drawings and these specifications.

STATUTORY BOND: (35)

The statutory bond shall be for the full amount of the contract price in all respects in conformity to law, to protect the Owner from all mechanics' labor material supply men, or sub- contractors liens. No work shall be done until this condition is complied with, unless it is otherwise specifically mentioned in the agreement.

The Owner is to file this bond with the Clerk of the District Court in the county in which the building is to be built.

PAYMENTS: (36)

The Contractor will be paid 90% of the value of the materials and labor delivered on the building site or used in the building, less any amount previously paid, on or about the first day of each month as the work progresses, and final payment within 15 days after the building is completed and accepted.

GENERAL CONDITIONS:(37)

The general conditions governing this work shall be those established as standard by the American Institute of Architects

which shall apply hereto. The heating apparatus proposed herewith includes the furnishing, delivery and erection of all necessary material and labor, including boilers, supply and return piping, vacuum pump, radiation and all specialties shown on plans or called for in these specifications or which may be necessary to make a complete working job which shall be first class in all particulars, and in accordance with the following specifications and plans accompanying same.

The Heating Contractor is to handle the work in such a manner as to best conform to the progress of the building while under construction to the end that the heating will be completed as soon as possible after the building is completed.

The heating system is to be what is known as the Plenum forced air system.

CUTTING & EXCAVATION:(38)

Any excavation or filling necessary for the proper installation of this system must be done by, and at the expense of the Heating Contractor. Where holes or recesses must be cut in the walls, floors, ceilings or any other part of the building, it must be done by a competent workman in a neat and workmanlik manner and at the expense of the Heating Contractor. Al damage done by his workmen must be repaired, employing the services of the Contractor whose work is damaged when so directed by the Architect or his representative on the job.

DIMENSIONS: (39)

Figured dimensions shall always be taken in preference to scale dimensions. Finish dimensions shall be taken from premises by Heating Contractor.

OPENINGS: (40)

The Heating Contractor shall arrange for proper openings in building to allow for admission of all Heating apparatus.

BOILERS: (41)

The Heating Contractor shall furnish and install on suitable foundation two 5000 ft Cast Iron Boilers. Same shall be guaranteed by the manufacturers to be free from any and all defects, to have perfect internal equalization, to maintain a steady water line and to have tight fitting doors. No experimental or untried boiler will be accepted.

Each boiler shall have the manufacturer's guaranteed capacity and ratings of not less than 5000 sq. ft. of standard direct cast iron radiation.

Each boiler must be completely equipped with all necessary trimmings including a water column with water gauge, glass and try cocks, an automatic damper regulator, a compound pressure and vacuum gauge, and safety valve set to blow at 10# pressure, and a blow off cock. A complete set of firing tools consisting of a poker, hoe, slicebar, scoop and flue brush and handle, shall be furnished. Install approved water supply connection, using brass feed cocks and a horizontal swing check valve in same, and connect to water supply in building.

SMOKE CONNECTION:(42)

The boiler shall be connected with chimney by a substantial smoke pipe constructed of # 16 gauge steel plate. The smoke pipe shall be free from abrupt bends, it shall pitch upward toward the chimney, and it must not project into the chimney beyond the inside surface of chimney wall. A close fitting, easy moving hand damper must be provided in same, from each boiler.

PIPE & FITTINGS: (43)

All pipe shall be full weight, standard size thickness and best quality, of sizes noted on drawings, straight, true and round, with full cut threads. All fittings shall be of the best quality

cast iron, screw fittings, free from imperfections. Unions shall be installed wherever required and necessary. Where reduction in size of pipe occurs, it is preferable to use reducing fittings instead of bushings.

The ends of the pipes shall be reamed and filled, and all burrs removed from the interior of same. All joints shall be iron to iron joints tested steam tight. Proper provision must be made for expansion when installing all pipes.

FAN:(44)

This Contractor will furnish and install two No.13 Design No. 3. Sturdevant Multivane Fan. It shall be made single inlet, single width, right hand, discharge and have 7/8" housing. The wheel shall be not less than 72" in diameter 61-1/2" wide.

The outlet shall be 53" x 69-3/8" , the diameter of the inlet shall be 74-3/4". The total height of the fan housing shall be 118-5/8", the width in direction of shaft 91-5/8" and the length transverse to the shaft 97-1/4". The fan shall have a capacity of 21,000 cu. ft. per minute.

This Contractor will furnish and install a double deck 50 inch Vento Heater, 16 sections wide, Use 5 inch steam main and 3 inch return. Use 20% of total coils for Tempering Coils and place same as indicated on plan.

CLEANING:(45)

After all the system has been in service a few days a thorough cleaning out of boiler must be made by boiling several hours under pressure of about ten pounds with the safety valve opening used to discharge water out at the top while admitting cold water at the bottom.

Any dirt, rubbish, or grease on walls, floors or fixtures for which the Heating Contractor is responsible, must be removed by

him and the premise left in first class condition in every respect.

COVERING: (46)

Boilers to be covered with asbestos cement plaster 1-3/4" thick, reinforced with galvanized chicken wire, then canvassed on and painted black.

All steam mains, valves, fittings and spring pieces in supply line in the boiler room are to be covered with Johns-Manville Improved 4-ply asbestos cell covering, canvassed and banded on and painted black.

GUARANTEE: (47)

When the apparatus proposed to be furnished is completed in accordance with the conditions thereof, the Heating Contractor must guarantee it to circulate thoroughly in the system without noise, with steam pressure on the heating main not to exceed 5 pounds.

If, after this apparatus is installed, accepted and paid for, any part constructed in strict accordance with the drawings and specifications or the true intent thereof, shall fail to accomplish the guarantee herein, by reason of any defect developing within the period of one full heating season, due to faulty material or poor workmanship, the Heating Contractor shall remedy such defect at his own cost within a reasonable time after notice. The term "Defect" as above used shall not be construed as embracing such imperfections as would naturally follow improper treatment accident or the wear and tear of use.

AUTOMATIC TEMPERATURE REGULATION: (48

This Contractor is to furnish and install a complete system of Automatic temperature regulation and humidity control, furnishing all necessary thormostats, valves, dampers, humidifiers, special devices, air compressors, piping and fittings, and labor of installing system except setting valves and dampers in position.

SCHEDULE

	Thermostats	Valves
Second Floor		
Class Room # 7 -	1	1
Class Room # 8 -	1	1
Glass Room # 9 -	1	1
Class Room #10 -	1	1
Class Room #11 -	1	1
Class Room #12 -	1	1
Library -	1	1
Teachers Room -	1	1
Nurses Room -	1	1
First Floor		
Class Room # 1 -	1	1
Class Room # 2 -	1	1
Class Room # 3 -	1	1
Class Room # 4 -	1	1
Class Room # 5 -	1	1
Class Room # 6 -	1	1
Principal's Room-	1	1
Teachers' Room -	1	1
Basement		
Boys Gymnasium -	1	1
Manual Training -	1	1
Girls Gymnasium -	1	1
Domestic Science-	1	1

THERMOSTATS: (49)

Johnsons Metal Diaphragm Model Thermostat size 4-1/2" x 1" of"P" type, positive shut-off and positive motion.

VALVES: (50)

Use Johnsons Metal Diaphragm Valve having the Sylphon Metal

Metal Bellows for its diaphragm. Valves are to be nickel plated with unions.

AIR COMPRESSORS:(51)

Use steam compressor of sufficient size to operate the system, with a factor of safety not less than three, and it shall be fitted with all necessary governing devices.

HUMIDOSTATS: (52)

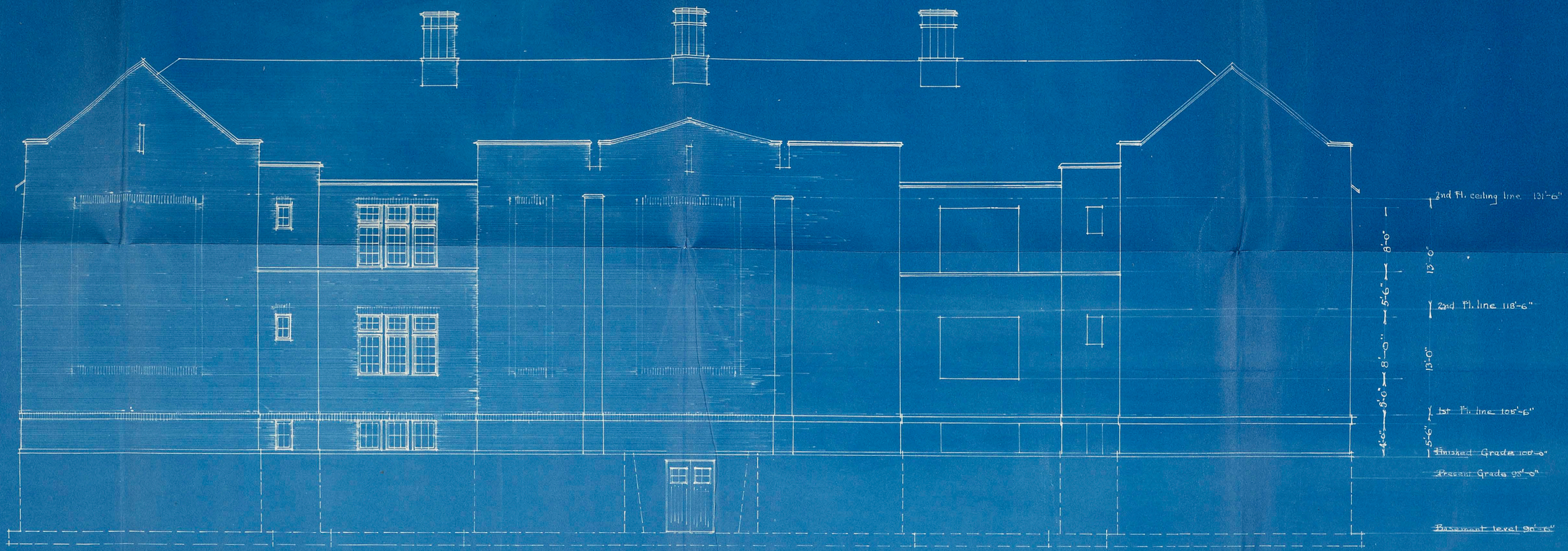
A Johnson perforated steam humidifier and a Johnson Humidostat shall be used.

DAMPERS: (53)

Dampers shall be made by the heat regulating contractor, but installed by the galvanized iron contractor, Dampers shall consist of wrought iron frames, sheet steel blades, strongly cleated with brass bearings.

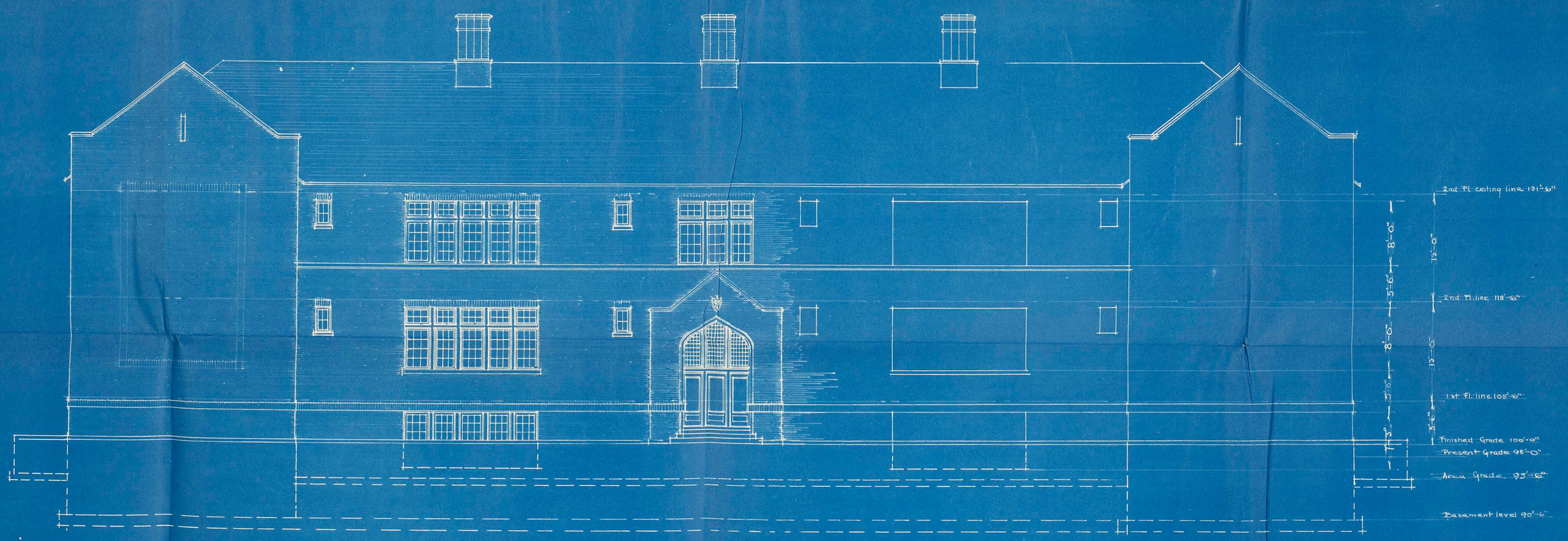
GUARANTEE: (54)

This system shall be complete in every respect, and all necessary material and special fittings shall be furnished whether specifically mentioned or not. System shall be guaranteed free from all original defects in material and workmanship, and any parts proving defective or wearing out within two years from date of completion shall be replaced free of charge. Thermostats shall operate the valves or dampers to which they are attached, at a variation of not to exceed 1^{o}, above or below any given point.



REAR · ELEVATION

SCALE $\frac{1}{8}$"-1'-0"



FRONT · ELEVATION

SCALE $\frac{1}{8}$"-1'-0"

A · GRADE · SCHOOL
THESIS · IN · ARCHITECTURE
J · W · BIHR · JR · ARCHITECT

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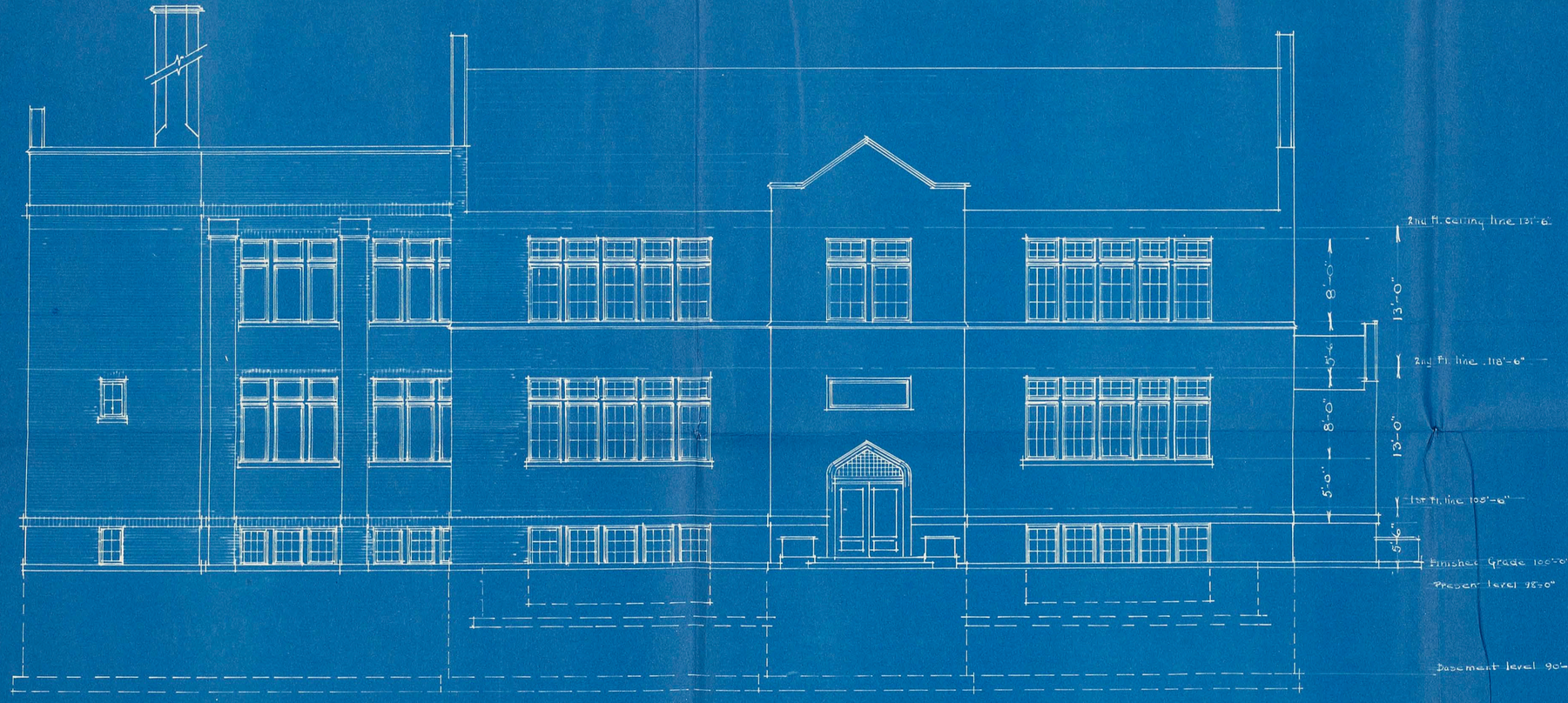
SIDE ELEVATION

SCALE 1/8"-1'-0"



SIDE ELEVATION

SCALE 1/8"-1'-0"

A GRADE SCHOOL
THESIS IN ARCHITECTURE
S. W. BIHR JR. ARCHITECT

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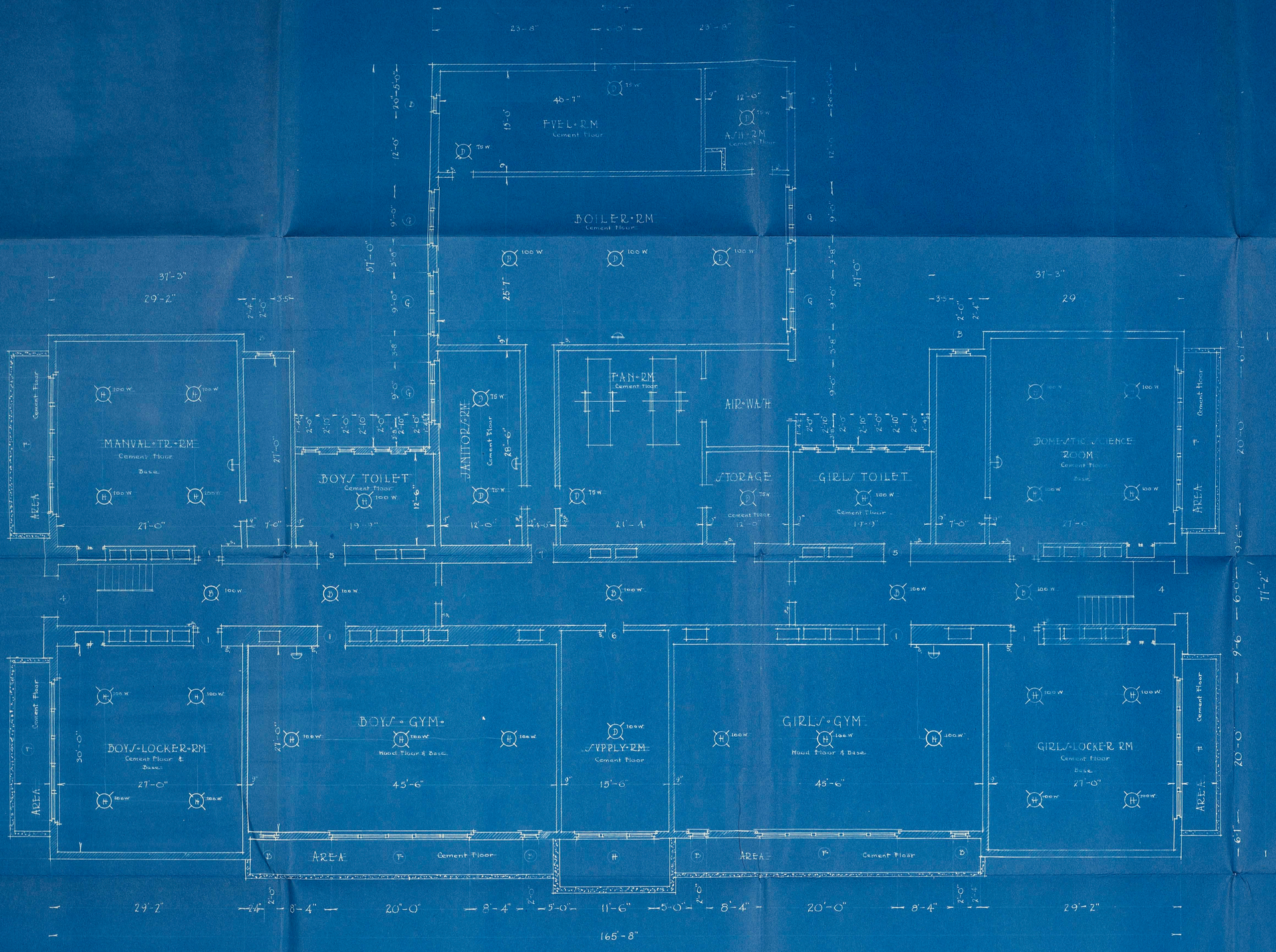

BASEMENT·PLAN

SCALE 1/8"=1-0"

·WINDOW -·SCHEDYLE·

		Glass Size	Glass	Division	Thick
D	D.H.	16×26	Clear AA	See Elev.	1⅜
G	Casement	28×36	Clear AA	See Elev.	1⅜
H	D.H.	36×36	Clear AA	See Elev.	1⅜
F	D.H.	36×38	Clear AA	See Elev.	1⅜

· DOOR -·SCHEDYLE ·

1	3-0×7-0×1⅜ - Glazed Maze Glass - 14" Trans.
4	Two 2'-8×7'-0×1¾ Glass Doors. See Elevation
5	3-0×7-0×1⅜ - Maze Glass - 14" Trasom.
6	2-6×7-0×1⅜ Five Panel Door.

·ELECTRICAL · SCHEDULE·

	Ceiling Outlet, Letters Refer to Fixtures.
	Bracket Outlet.
	Special Outlet.
	Base Plug.
	Master Time Clock.
	Secondary Time Clock & Bell.
	Single Pole Switch.

A·GRADE·SCHOOL
THESIS·IN·ARCHITECTURE
S·W·BIHR·JR·ARCHITECT

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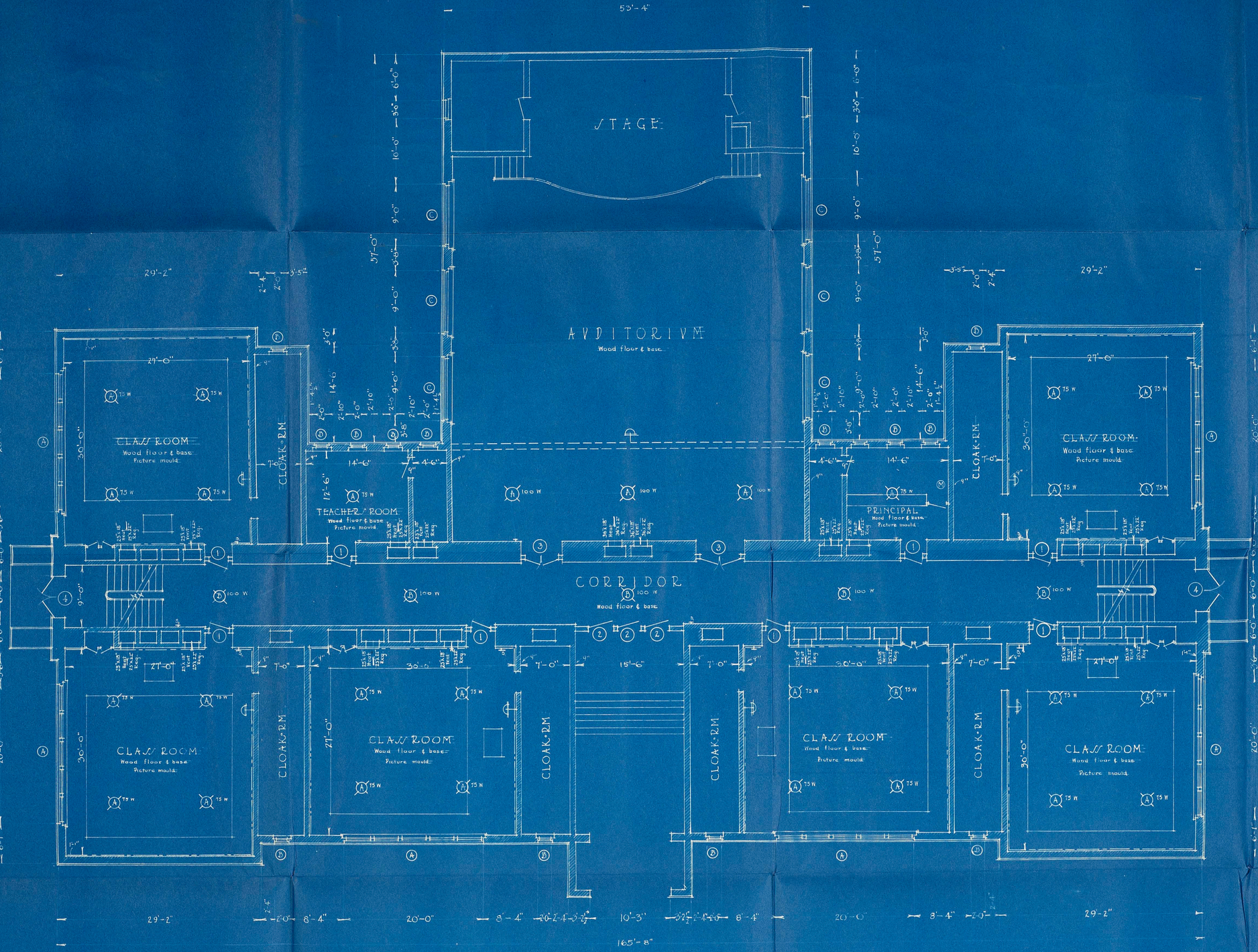

WINDOW SCHEDULE

		Glass Size	Glass	Division	Thick
A	D.H.	36 x 38	Clear AA	See Elev.	1⅜"
B	D.H.	16 x 26	Clear AA	See Elev	1⅜"
C	D.H	28 x 36	Clear AA	See Elev	1⅜"

DOOR SCHEDULE

1	3'-0" x 7'-0" x 1⅜" Glazed Maze Glass 14" Trans.
2	3'-6" x 7'-0" x 1⅜" Clear AA Glass 14 Trans.
3	Two 3'-0" x 7'-0" x 1⅜" Five Panel.
4	Two 2'-8" x 7'-0" x 1¾" Gl. Drs. See Elev.

ELECTRICAL SCHEDULE

○	Ceiling Outlet Letter Refers to Fixtures
⊖	Bracket Outlet
⊘	Special Outlet
⊟	Base Plug
(M)	Master Time Clock
◑	Secondary Time Clock & Bell
⊣	Single Pole Switch

FIRST FLOOR PLAN

SCALE 8"=1'-0"

A GRADE SCHOOL
THESIS IN ARCHITECTURE
S. W. BIHR JR. ARCHITECT

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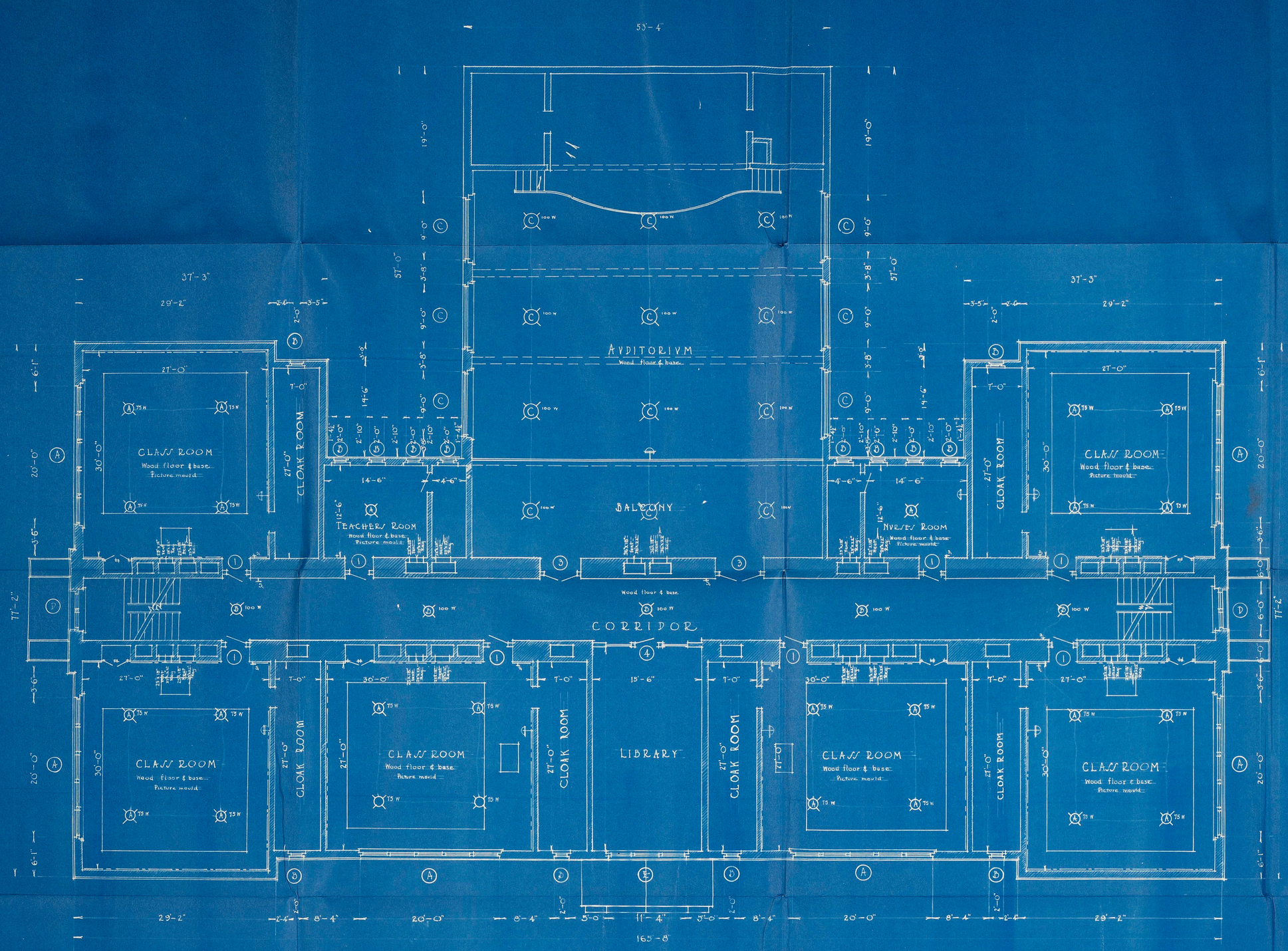

SECOND FLOOR PLAN

SCALE 1/8"=1'-0"

WINDOW SCHEDULE

		Glass Size	Glass	Division	Thick
A	D.H.	36x38	Clear AA	See Elev.	1⅜
B	D.H.	16x26	Clear AA	See Elev.	1⅜
C	D.H.	28x36	Clear AA	See Elev.	1⅜
D	D.H.	28x38	Clear AA	See Elev.	1⅜

DOOR SCHEDULE

1	3'-0"x7'-0"x1⅜ Glazed Maze Glass-14" Transom
3	Two 3'-0"x7'-0"x1⅜ Five Panels
4	Two 2'-8"x7'-0"x1¾ Glass Doors See Elevation

ELECTRICAL SCHEDULE

○	Ceiling Outlet, Letter Refers to Fixtures.
⊖	Bracket Outlet.
△	Special Outlet.
▭	Base Plug.
(M)	Master Time Clock.
D	Secondary Time Clock & Bell.
⊣	Single Pole Switch.

A GRADE SCHOOL
THESIS IN ARCHITECTURE
S W BIHR JR ARCHITECT

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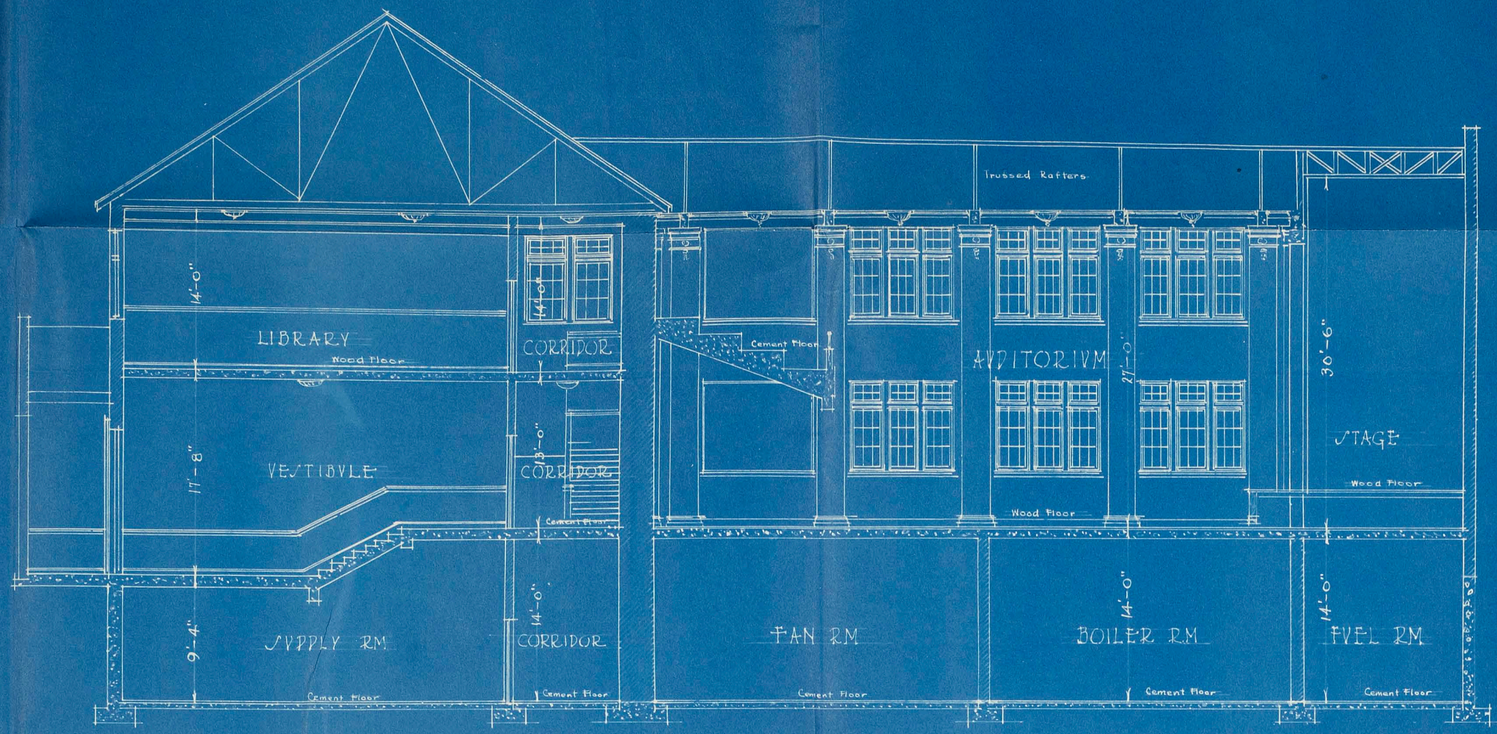
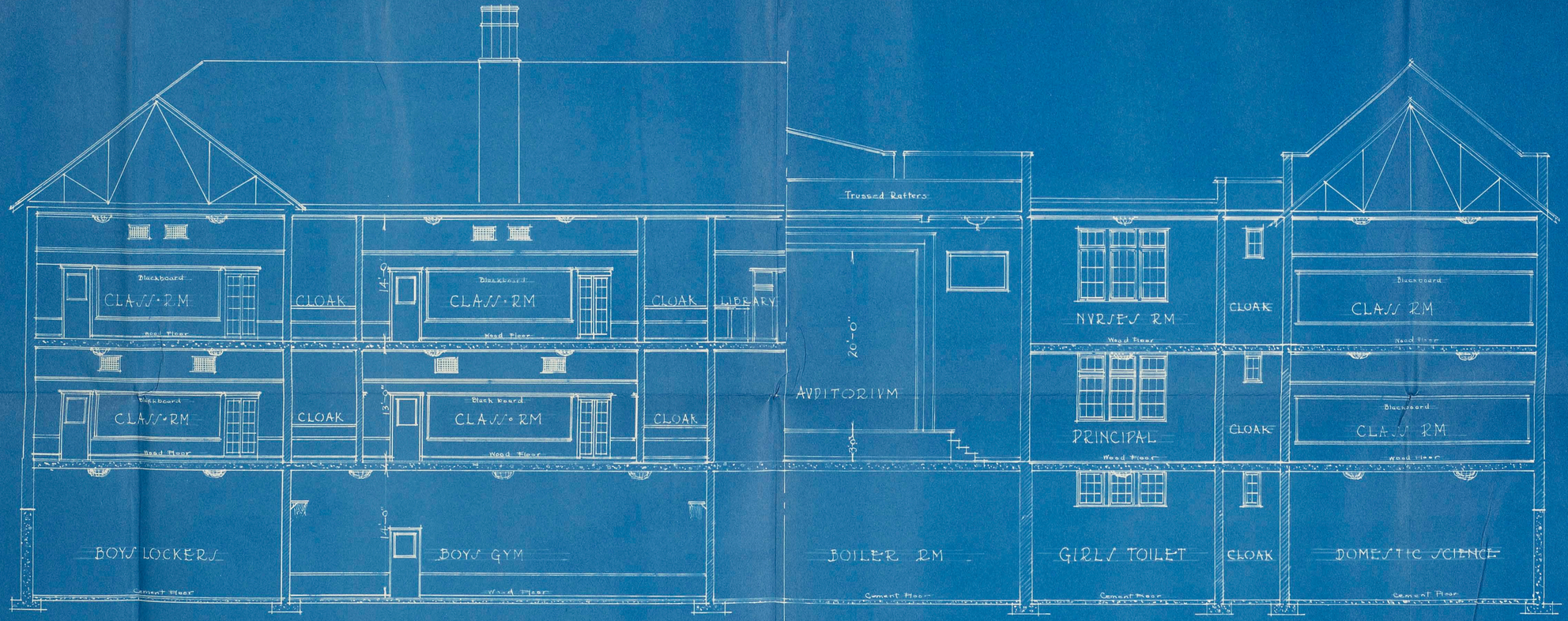


CROSS · SECTION

SCALE $\frac{1}{8}$" = 1'-0"



TRANSVERSE · SECTION

SCALE $\frac{1}{8}$" = 1'-0"

A · GRADE · SCHOOL
THESIS · IN · ARCHITECTURE
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