

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

Material and Labor to be Employed in the Erection of an

AGRICULTURAL HALL

for

Kansas State Agricultural College

at

Manhattan, Kansas.

Prepared by

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REFERENCES:

Notice to Contractors.

Sealed proposals will be received at this office according to conditions herein set forth and duly specified for the erection and completion of said building until _____ th day of _____, 19__, at _____ o'clock.

Drawings and specifications are the property of the architect. They must not be used for any other buildings and must be returned when the building is completed.

The Owner reserves the right to reject any and all bids.

TECHNICAL SPECIFICATIONS.

For _____

For _____

At _____ County,

State of _____.

Proprietor,
or party of the 1st part. (39)

Contractor,
or party of the 2nd part.(46)

Architect and Superintendent.(41)

I. INSTRUCTIONS TO BIDDERS.

Understand Plans and Specifications. (1) If the bidder does not understand any part of the plans or specifications, before submitting his bid, he shall make inquiries of the architect before bidding, and satisfy himself as the interpretation of all the plans and both the technical and general specifications on which the bid is to be submitted; for he will be held rigidly to the interpretation of said Architect of said plans and both the technical and general specifications. (43, 48)

Must Inform Themselves. (2) Bidders must inform themselves as to the local conditions of soil, water, rock, trade, labor, material, things, etc., from personal inquiry on the ground or otherwise, as the chances on all such must be taken by the Contractor.(123)

Bidders Name and Address. (3) Each bidder in his proposal is required to state his full name and place of residence, the names of all parties interested with him in business, and if no person or persons be interested, he must state this fact also, and must also state whether his bid is made without connection with and other person making any other proposal for the above work. (13, 121, 44)

Bids by Corporations. (4) In cases where corporations submits a proposal, the proposal must be signed with the full name of each officer of the corporation, and their addresses given in addition to the corporation signature, with official seal affixed thereto. (131) 5)

Partnership Bids. (5) When a firm bids, the individual names of all the members of the said firms shall be written out and shall be signed in full, giving the full christain names, but the signatures may, if they choose, describe themselves in addition as doing business under a given name and style of the firm. (131)

Bids by Agents. (6) Any one signing a proposal as the agent of another or of others must file with it legal evidence of his authority to do so.

Names of Sureties. (7) Bidders are required to name the sureties or surety company who have signified their willingness to sign the required bond in case the contract should be awarded to him or to them. (122)

Consent of Sureties. (8) The bidders must also furnish evidence that said named persons as sureties on the required bond have consented to become such in case the bidder is awarded the contract. (122, 135)

Qualities Approximate. (9) In making up the bids all qualities, when such are given, must be determined by the bidders themselves, as such as are noted are only approximate, and no responsibility attached to the College^{or} Architect in this matter. (44, 45, 63)

Quality of Materials, etc. (10) Each bidder will understand that the quality of the materials bid upon, as well as that of the proposed workmanship and the time of the completion of the work or supply of materials, will be considered in the matter of the acceptance of his proposal. (43, 44, 45, 68, 70)

Bidders must be Practical Contractor or Bidder. (11) Proposals from parties who are not known to be regularly and practically engaged in the class of work called for by the drawings and both the technical and general specifications, and known not to possess ample facilities for doing the same, will not be accepted. (49)

Manufacturer Named. (12) Bidders must state the names of Manufacturers of the materials or the machinery which they propose to furnish and use in the work for which their bids are made. (68, 72)

Must not be Interested in Other Bids. (13) Reasonable grounds for supposing that any bidder is interested in more than one

proposal for the same item, may cause the rejection of all proposals in which he is interested. (3)

Bidders Agree to Terms and Forms of the Contract. (14)

Parties making bids are understood to accept the terms and conditions contained and expressed in the forms of the Contract, in both the technical and general specifications, plans, etc., annexed to the proposal submitted.

Bidders who are Debtors. (15) No bid will be accepted or contract awarded to any person, firm or corporation who is in arrears to the Kansas State Agricultural College, upon debt or contract, or who is a defaulter as surety or otherwise upon any obligation to said College. (107, 108)

Bidders Must Possess Resources. (16) The bidder must satisfy the Architect of his available resources and of his ability to furnish the materials and perform the work for which he bids. (134)

II. FORM OF PROPOSAL.

How Addressed. (17) All proposals must be addressed to President E. R. Nichols, of the Kansas State Agricultural College, at his office at Manhattan, Kansas, endorsed, "Proposals for the erection of the new Architectural Hall", with the name of the person making the proposal, and the date of its presentation.

Endorsement and Time of Delivery. (18) The proposals must

be sealed and delivered at the office of the said President, endorsed "Proposal for _____" before _____ o'clock, _____ M., the _____ day of _____, 19____.

Bids Accompanied by Certified Checks. (19) As a guarantee of good faith, bidders on the work will be required to accompany their proposals with cash or a certified check on some bank doing business in Kansas, in the sum of _____ dollars (\$ _____), made payable to the Board of Regents of the Kansas State Agricultural College, to be returned on the condition that a good and valid contract and bond be entered into by the bidder, as herein after specified. No proposal will be considered as received until such check or money has been deposited and examined and found to be valid and sufficient. (22)

Checks Returned. (20) The check of the contractor will be retained until his bond and contract shall have been accepted, and until at least an amount of work has been performed upon the contract in value to at least double the amount of the check, at which time said check shall be endorsed back to the maker. (123, 134)

Check When Part of the Work has been Bid upon. (21) Bidders on less that the entire work will be required to accompany their proposals with a sertified check as above in the sum of at least _____ per cent (___%) of the amount of the proposals. (119, 120)

Checks Forfeited. (22) Any person, firm or corporation bidding, failing or refusing to enter into a contract upon the terms

of his proposal, after the award of contract is given them, will forfeit his or their check to _____ or assignors, as due and liquidated damages in consequence of such failure of refusal. (19, 30)

Bids Made out on Blank Forms Furnished. (23) Bids shall be made upon duplicate blanks similar to the one found in the back part of the copy of the specifications, and which are marked "Proposals" (112) which duplicate blanks will be furnished by the Architect.

Prices Legibly Written. (24) The prices must be plainly and legibly expressed in writing or in figures in the respective columns for the same. (113 to 118)

Lump Sum Tenders. (25) Tenders or bids on the work as a whole must be supposed to cover the work as a whole, and its entire cost of completion to the fullest uses for which the work was intended. (118a)

Dividing Proposals. (26) Proposals will be received on any of the divisions marked in the proposals separately, and awards may be made in like manner, but at the option of the College. (113, 118)

Bidders Option Expressed. (27) Each bidder must, however, state whether he will accept contract for any single division of the work if he is not awarded the contract for the whole. (119, 120)

Proposals Regular. (28) Proposals that contains any omissions, erasures, alterations, additions or terms not called for both in the technical and general specifications or plans, or that contain ir-

regularities of any kind may be rejected as informal. Alterations or interlineations should be explained or noted in the proposal over the signature of the bidder.

Unbalanced Bids. (29) Any bid in which the prices stated for several items are unbalanced, may be rejected.

Bids Cannot be Withdrawn. (30) Permission will not be given to withdraw, modify or explain any proposal or bid after it has been deposited with the Architect, except with the consent of said Architect, or the College. (22)

Samples of Materials, etc., to be Submitted. (31) When practical, it is desired that the bidder shall submit samples of the materials which he proposes to furnish for the work, as well as samples of the class of workmanship which he proposes to do in the construction of the work. The samples of the successful bidder will be retained, and by those samples all materials or workmanship afterwards used or furnished by him will be judged. (61,66,67,65)

Catalogues or Literature Submitted. (32) Catalogues, literature or circulars describing the material, machinery, workmanship or things bid upon, offered by the respective bidders, will be received and filed, and the statements therein contained concerning such materials, machinery, workmanship or things bid upon will be considered as evidence and guarantees of the performance of such things bid upon, and for which statements the contractor will be held responsible, and the fulfillment of the requirements of such statements will be exacted in the test of performance for such material, machinery, workmanship or things bid upon.

III. THE LETTING.

Rejection of Bids. (33) The College reserves the right to reject any or all bids and to enter into to contract for such sections as he shall conclude upon doing, or which seems to him advisable to construct. (39)

Informalities may be Waived. (34) The College reserves the right to waive any informalities in any proposals that may be received, and to accept any or all proposals, or none, and to disregard the bid of any disreputable or failing contractor, known as such to the Architect.

Award of Contract. (35) The award of the Contract, if award is made, all things being equal, shall be made to the lowest bidder and whose bid is regular, but the College in this shall have full discretion in determining upon quality of material, workmanship, time, etc., etc., to enable him or them to arrive at a conclusion as to who is the lowest bidder, all things considered, and it is fully understood that the mere matter of price is not necessarily the sole determining factor upon which an award may be made. (123)

Time Limit in Executing Contract. (36) The contract must be entered into within _____ days after the award is made. The entire specifications, both general and technical, and all the drawings, plans, statements, letters, etc., referred to or attached, shall be considered a part of the contract. (48)

Limit of Executing Bond. (37) Within _____ days after sign-

ing the contract, the Contractor shall file with the College, an approval bond in the sum of _____ dollars, (\$____) or not less than _____ percent (___%) of the amount of his contract, conditional upon the faithful performance of his contract. Said bond shall have at least two approved sureties acceptable to the College, said sureties to schedule their resources and liabilities if required by the College. (134)

Assignments or Contract. (38) No part of the work shall be sublet or assigned to other parties, except upon the written consent of the College, and when any work is sublet or assigned, the College must receive notice of the same before such sub-contract or assignment shall be binding. Contractors must also notify subcontractors of the necessity of their signing the original specifications and contract. (49, 132)

IV. PARTIES TO THE CONTRACT.

(a) The Proprietor.

Meaning of the Word College. (39) Whenever the word "College" is used it is understood to mean the Kansas State Agricultural College, represented by the Board of Regents, who may delegate certain powers to the President of the Board of Instruction, or to a building committee, appointed from their numbers, whose only burden in this Contract is the payment of the contract price as per contract. (37, 66, 70, 74, 98, 130)

Reserves the Right to ^{terminate} Determine. (40) The College reserves the right to ^{terminate} determine the general or any subcontract at pleasure when the provisions of both the general and technical specifications

are not being carried out by the general or sub-contractors in good faith, or as the Architect is directing. He also has power to terminate the contract itself as per certain provisions herein specified (55)

(b) The Architect.

Meaning of the Word Architect. (41) When ever the word "Architect" is used, it is held to mean the Architect or Superintendent in charge of the work.

As Arbitrator. (42) The Architect shall be sole arbitrator concerning disagreements, delays, suspensions, abandonment, estimates, general interpretation of both the general and technical specifications, etc. Either of the above terms might include any authorized assistant or assistants when following the direction of the Architect.

Sole Judge as to Quality. (43) It is expressly understood that the Architect shall be the sole judge of the quality of the work, and of the skillfulness of the work, and the efficiency with which it is performed, and the workmanlike manner in which it is completed. (67, 68)

To Determine Omissions, Additions or Extra Work. (44) It is expressly understood by and between the parties to this contract that the Architect shall determine the questions as to what are the additions and omissions, and the quality, quantities, character, classifications, sufficiency and value of any and every material and work arising from, due to, or required by any alterations, deviations, addition or omission in the plans, both the technical and general specifications

cifications or contract, or of any matter growing out of the construction or completion of the works made or caused to be made by the Architect, Owner or Owners, or by the necessities of the work, the same as if it had been included in the original specifications, plans, and contracts, and all questions as to whether they are properly and skillfully executed in conformity with the plans, and specifications and his decision, estimate and certificate in respect thereto shall be a condition precedent to any right to recover therefor by the Contractor. (9)

Decision and Certificate Final. (45) To prevent all disputes and litigation it is agreed by and between the parties of this contract that said Architect shall in all cases determine the amount, or the quantity or quality of the several kinds of work which are already paid or yet to be paid for under this contract, and he shall determine all questions in relation to said work, and the construction thereof, and he shall in all cases decide every question which may arise relative to the execution of this contract on the part of the contractor.

(c) The Contractor.

Meaning of the Word Contractor. (46) Whenever the word "Contractor" is used, it is held to mean the person, company, corporation, party or parties, contracting to do the work under both the technical and general specifications Vix., _____ of _____ State of _____, or their representatives or agents. (39,40,53,58,61,71,78,79,87,107,109,111 and 131)

Must Notify Propreitor of Contemplated Sub-contracts. (47)

The contractor must notify the College of any contemplated sub-contract before entering upon the execution of the same, and any sub-contractor must acknowledge his understanding of the plans and specifications by signing his name to the original contract, as sub-contractor to perform the part of the work he has contracted to do. The obligations of the Contractor are not relieved in any manner by any sub-contract he may enter into. (1330)

Time for Beginning and Completion of the Work. (48) The said Contractor agrees that the work to be done under this contract and both the technical and general specifications shall be commenced within _____ days after the execution of the contract, and shall proceed with the performance of the work as hereinafter provides, with such force and in such manner as to secure the completion of the work contemplated by the plans, both the technical and general specifications, and this contract to the fullest uses for which it was intended the _____ day of _____ 19____, the time of beginning, the rate of progress and the time of completion being essential conditions of this contract. (36,96,97)

Must be on the Work Personally. (49) The Contractor must at all times be personally upon the work, or be represented by some acceptable, duly qualified superintendent, authorized to act in his stead in all matters, and for whose act and neglect he shall be held entirely responsible. (11)

Work Carried on Under Orders of Architect. (50) It is agreed that the Contractor shall commence and carry the work on at such points and in such order of precedence and at such times and seasons and with such a force and in such manner as may from time to time

be directed or permitted by the Architect. (42)

Must Consult Architect in all Cases. (51) The Contractor must consult the Architect at all times concerning locality, elevation, place manner, arrangement, quality, quantity, proportion, methods, etc., or concerning unsettled or doubtful points that may be liable to arise, and in his failing to do so, such work as may have been prosecuted in the absence of the Architect in a different manner than in the opinion of the Architect should have been done, shall be ordered reconstructed. (42, 43, 44, 45, 99)

Distraction of Data. (52) The Contractor shall be held responsible for the removal of any stakes or data that shall have been given by the Architect, and if it become necessary to reset or again lay out any of the work on account of any stakes being removed or such data being destroyed, the same shall, if needed, be replaced at the expense of the Contractor. (42)

Must Notify the Architect of Shift of Forces. (53) Before the Contractor shall desire to begin any particular or remote work, he shall first notify the Architect of his desire to do so, and the locality thereof, or when he is about to shift forces to another locality, that the Architect shall be able to give such instructions as may be needful. (42)

Improper Work. (54) Rejected work shall be immediately reconstructed under direction of the Architect, and should the Contractor fail to furnish new and acceptable material, or to correct imperfect work, when ordered to do so by the Architect, then the College shall have the right to furnish proper material and labor at the expense of the Contractor, or deduct as provided for in "incorrect performances",

at his option. (43, 97, 98, 99)

In Case of Abandonment. (55) If, for any reason, the Contractor shall abandon the work, or if the Architect should at any time decide that the work, or any part of it, is unnecessarily delayed or that the Contractors are violating any of the conditions of the contract, or are executing the same in bad faith, the contract may be annulled at the option of the College in this case, and the work completed at the expense of the contractor or relet to other parties. (44, 40)

Unsuitable Weather Cause for Delay. (56) During unsuitable weather the Contractors must stop all work when such work is liable to be injured or improperly constructed, and the same must be suitably protected in all cases as directed. (92, 98)

Permitting Possessing of Work. (57) The Contractor must permit the College to enter upon and take possession of, and use all or any portion of, the completed work, without compensation therefor, and in doing so such ~~work~~ use shall not be held to mean an acceptance of the same. (39)

To Prevent Sabbath Breaking. (58) The Contractor will not be permitted to gain time by prosecuting work on the Lord's Day, commonly known as the Sabbath, and the doing so will be held just reason for nullifying the contract.

V. PLANS AND SPECIFICATIONS.

Ownership of plans and Specifications.-(59) The ownership of

all plans, both technical and general specifications, or drawings, whether original or reproduced is vested in _____

(41)

Written Parts Take Preference to Printed. (60) Whenever or wherever the written parts of this contract, or both the general and technical specifications or plans do not agree or in ^{are} apparent conflict with the printed terms or instructions, or with scaled dimensions of the building, the written terms shall be preferred and prevail in both matters of construction and estimates, provided, however, that nothing herein provided shall limit or destroy the power of the Architect to interpret such terms or dimensions in such manner as is most consistent with the intention and spirit of the contract and both the general and technical specifications, and of that question the Architect shall be sole judge. (43, 44)

Contractor to have Copy of one Set. (61) One complete copy of the plans and both the technical and general specifications shall be furnished by the Architect to the Contractor for his own use, and the same or copies thereof shall be kept constantly on the works by the Contractor, by which instructions can be given by the Architect. (46)

Custody of Plans, Specifications and Contracts. (62) It is hereby mutually agreed that until the contract shall have been completed, the Architect shall have the custody of such plans, elevations, sections both of the technical and general specifications, and schedule of such prices, and of this contract, on behalf of all of the parties concerned, after the discharge of such contract, they shall

shall then be returned by all parties to this contract to the Architect. (41, 43)

Omission of Details. (63) It is expressly understood and agreed that in event of anything either in material or workmanship reasonably necessary or proper to the complete performance of the works (and of which the Architect shall be the sole judge) having been omitted to be shown in the drawings, or in the event of it not being described in the general specifications, either through oversight or error, the Contractor then shall, notwithstanding execute and provide all such material, work or things necessary as fully as if they had been severally shown, specified and described, without any charge and according to the description of the Architect, and to his satisfaction, ready for the fullest use for which it is intended. (43,44,45)

No Advantage Taken of Errors. (64) It is further expressly agreed and understood that the specifications, drawings and conditions as set forth are intended to cooperate and agree, and that they are to be interpreted so that any work exhibited in the drawings and conditions, and not mentioned in the specifications, and vice versa, are to be executed the same as they were mentioned, according to the true meaning, spirit and intention of the said drawings, conditions or general specifications, without any extra charge whatever. The general Contractor or any of his sub-contractors, are requested to check over the Architects work before executing any of the same, and if any mistakes occur or any omissions are found in the same, they must at once report to the Architect for the correction of the same by him; a fine

failure to do so by them, neither the Architect nor the Owner will be held responsible for any loss thus sustained by either the general or sub-contractors. (43, 44, 45)

Adjustment of Discrepancies. (65) If any discrepancies or variations appear between any of the drawings or specifications, or between any of the several drawings in themselves, such discrepancies shall be interpreted, explained, adjusted and decided by the Architect, and all necessary corrections or adjustments must be made by the Contractor which may be necessary to the full completion of the work as the Architect directs. (42)

May Make Alterations. (66) The College at all times reserves the right to make any changes or alterations they may see proper of the line, grade, plant, form, dimensions or materials or the amount or character of the work herein contemplated, or any part thereof, deducting the saving or adding the cost as the case may be, to the face of the contract, which amount shall be determined by the parties of the contract or by the Architect. (42)

VI. MATERIAL AND WORKMANSHIP.

Conform to General Specifications. (67) It is expressly agreed that all the work, labor and material to be respectively done and furnished under the contract, shall be done and furnished strictly pursuant to and in conformity with the general specifications and plans, and under the direction of the Architect as given by him from time to time, during the progress of the work under the terms of the contract, and which plans and both general and technical specifications

form a part of the agreement: (43,44,123)

Material Best of Their Kind. (68) The machinery, appliances materials or things to be used throughout in the work, under both the technical and general specifications, shall be the best of their respective kinds, and new and used except where otherwise specified. (10,43,44,70, 75, 93, 95)

Subject to Inspection. (69) The Contractor hereby agrees that all workmanship and material of whatever description, shall be subject to the inspection and rejection of the Architect, and that the entire work shall be done to his satisfaction and approval. (42,75)

Inspectors. (70) The Architect or the College shall appoint such assistants as he or they may deem necessary to inspect the materials to be furnished and the work to be done under his agreement, and to require that the same strictly conform to the general specifications herein set forth, and any unfaithful or imperfect work or materials that may be discovered before the final payment for the work, shall be corrected directly on the requisition of the Architect, notwithstanding that it may have been previously overlooked by the proper inspector and estimated. It is hereby expressly agreed that the inspection of the work shall not relieve the contractor of any of his obligations to perform sound reliable work as herein described and specified. (73,99)

Contractor Provide Facilities for Inspection. (71) It is further agreed that the Architect shall at all times provide for the Architect or his authorized agents or assistants, convenient means of

access to all parts of the work during the entire progress, so that he shall have full liberty from time to time, and at all times to inspect, examine and test the material and workmanship furnished, and he shall be afforded every reasonable facility for ascertaining that the stock and materials employed and the workmanship furnished are in accordance with the requirements and intentions of this contract and specifications.

Mill and Shop Inspection. (72) The Contractor must notify the Architect of the name of the firm, factory, corporation, mill or warehouse which is to furnish the material intended for construction or for installation under this contract, and the College, in this manner, reserves the right to inspect said material in the ordinary way at said mill, warehouse, manufactory where all facilities for doing so shall be provided for by the Contractor or Manufacturer free of cost. The College also reserves the same right to send an inspector to inspect any shop work to be done, and in which case the said Contractor or Manufacturer shall provide like facilities for doing so at no cost to the College. Shop certificates of all required tests must be furnished duly certified, whether mill or shop work inspection is made by the Architect or his representatives or not, to the full satisfaction of the said Architect, and as he directs.

Inspection and Approval no Relief. (73) It is agreed by and between the parties of this contract that the inspection of the Architect of all or any of the work and the approval of the same by him during its completion shall not relieve the said Contractor from the full responsibility of doing the work as required by the conditions of this agreement. (70)

Materials shall not be Removed after Having been Delivered.

(74) And it is further expressly agreed that any and all material which shall be brought upon the premises by or for the Contractor for the purpose of erecting, constructing or for building into the work, which is the subject matter of this contract, shall be considered as immediately attached to and belonging to the premises, and that no part thereof shall be removed therefrom without the consent of the College or Architect. (39)

Condemned Materials must be Removed. (75) It is further

agreed that if the work or any part thereof, or any materials found or brought on the grounds for use in the work, or selected for the same, shall be rejected and condemned by the Architect as unsuitable, defective or not in conformity with the general specifications, the Contractor shall forthwith remove such materials from the work and rebuild or otherwise remedy such work as may be recommended by the Architect. (68, 95, 102)

Title to Materials. (76) From the commencement to the completion of every part of the work, the said work and all the materials and things upon or near the premises, whether placed on or incorporated into the works or not, shall be deemed to be and shall become the property of the said owner or owners, but he or they shall

not be responsible, charged or chargeable for anything lost, stolen, damaged, destroyed or removed from the building or works, or that shall fail in any way whatever; and the case of the same and every thing connected therewith or appertaining thereto, shall be with the Contractor, who shall protect and preserve, entire and uninjured, the whole of the said works and materials. (39)

Injury to. (77) In any injury or disfigurement shall be done thereto by fire or by the inclemency of the weather or by accident of any description, or by the workmen employed or by any other means whatever, then in every such case the Contractor shall completely repair or replace the same, as the case may be, at his own cost, so that on the completion of the works every part thereof shall be perfect and in a clean, complete and acceptable state. (92,99)

Where the College Provides the Material. (78) In case the College is to furnish the material with which the work under this contract is to be constructed, the Contractor shall be accountable for all materials which shall be delivered at the place where the same are intended to be used, and he shall be charged with the respective quantities and articles so delivered, and credited with so much thereof as shall be actually used upon and about said building or works, together with a reasonable allowance for waste in using the same, and in case there shall be any balance or deficiency in materials, then the Contractor shall be accountable for, and charged with all such balance or deficiency, at and after the rates and prices respectively at which the said materials were purchased.

Title to Wreckage. (79) It is also agreed and understood that the whole of the materials which at present form a portion of the old structures which are the property of the College and which are herein described, shall at the time stated for their removal, become property of the Contractor unless otherwise provided, and he shall immediately after their demolition remove them from the site of the contracted work, unless otherwise provided for in the contract.

VII. EXTRAS.

How Ordered. (80) No "extra" work shall be paid for, except under the written orders of the Architect, and should any extra work be ordered done, for which no price is named in the contract, then the amount to be paid for such work shall be determined by the Architect. (44,45)

Installation and Character of "Extras". (81) Should any "extra" be ordered, it must come under all the conditions of the specifications which are applicable, and such material or work shall be complete and perfect in the discharge of their functions to the fullest use for which they are required. (68)

Claims for "Extras". (82) All claims for "extra" work shall be made to the College within _____ days after the completion of said work, and failing to make such claims within the time, all rights of the Contractor for extra pay for said work shall be forfeited. (44, 45, 104)

VIII. WORKMEN AND LABORERS.

Must be Skilled. (83) Only skilled and competent workmen will be allowed to be employed on any part of the work requiring skill, and any workman, if found incompetent, shall be subject to summary discharge by the Architect for his incompetency, it being agreed and fully understood that the Architect shall have such power

to discharge to its fullest extent. Same applies also to laborers.
(45, 68, 69, 89, 93)

Penalty for Refusing to Discharge. (84) Should the Contractor refuse to discharge from his employ any workman or laborer, who in the opinion of the Architect is incompetent, or who has failed or refused to obey orders, there shall be deducted from the amount due the Contractor, on next succeeding estimate and payment, a sum amounting to double the wages paid the said workman or laborer for the time he is continued upon the work, after the order to discharge him has been given, and such sum shall be considered as damage arising out of attempting to carry out the work in bad faith. (99)

Incompetent not Permitted to Engage. (85) Under this cause the Architect may refuse to permit workmen of poor reputation, or of known incompetency, to begin or continue on the work, and the Contractor shall be without recourse against the Proprietor for such discharge or any delay occasioned by reason of the enforcement of the provisions of this clause. (42, 43)

Obedience to Instructions. (86) The Contractor or his employees must follow all instructions given by the Architect, and upon any refusal to do so, the Architect shall have power to discharge the offending workmen or laborers, and may require the work to be stopped until such orders are complied with. The Contractor shall be without recourse because of such discharge or results coming from it, or for any delay occasioned thereby. (42, 43, 44)

Workmen Quarters. (87) The Contractor shall build such sheds,

etc., as are necessary for the work or workmen, upon any acceptable location, and if required shall build suitable privy conveniences as directed by the Architect, for the use of the workmen, and their use is made obligatory, committing of nuisances are prohibited.

IX. DAMAGES AND FORFEITURE.

Burden of the Work. (88) From the commencement of the work to the completion of the same the care of the whole of the permanent works and of the whole of any temporary works, until their removal, shall remain with the Contractor, and they shall in every respect be held responsible from all accidents from whatever cause arising, and chargeable for any thing that may be stolen, removed or destroyed, to whomsoever belonging.

In Consequence in Using Poor Material. (89) They shall also replace and make good any loss, injury, damage, to and all defects in said premises of works, or to the adjoining or other buildings, premises or property, from bad or insufficient materials, bad workmanship or any other cause whatsoever, and whether such damages or defects were occasioned by the neglect of the Contractor or their agents or servants, or not, or maybe or might have been discovered during the progress of the work, or in consequence thereof, or may be or might have been prevented or shall appear to be known after the completion thereof, or whatever payment may have been wholly or partially made, or the work approved as supposed to have been properly done, the Contractor is still held responsible in such matters and the same

must be made satisfactory to the Architect. (99)

Proprietor Kept Harmless. (90) The Contractor will be required to keep said proprietor free from all claims for damages of whatsoever kind or nature which may arise by reason of said contract or work, or by reason by any act or neglect relating to the fulfillment of this contract.

Contractor must Defend Arising Litigation. (91) The Contractor also agrees to become defendant of all cases of whatsoever kind which may arise out of his contract or work done under the specifications and will also be required to preserve and keep College harmless from all claims or damages caused by any act or neglect relative to the construction of the work, or against any claim of any party or parties for the use or operation for any patent article that may be adopted or used in the installation of the work.

Loss or Damages because of Elements, etc. (92) The Contractor agrees that he will sustain all losses or damages by reason of the action of the elements, the nature of the work to be done under these specifications, both general and technical, or from any unforeseen encumbrance of obstructions on the line of work which may be encountered in the prosecution of the same. (65, 77)

Indemnity Against Loss by Accident, etc. (93) Said Contractor further agrees that he will indemnify and save harmless said College from all claims, suits, actions, and proceedings of every name and description which may be brought against said College, or his or their offices or agents, for or on account of any injuries or damages to persons or property received or sustained by an person or persons,

firm, or corporation, by or from said Contractor, or by or on account of any improper material or workmanship in its construction, or on account of any accident or any other act or omission of said Contractor or his agents or servants, and the Contractor agrees that so much of the money due, or to become due, under this contract as shall be considered necessary by said College, may be retained by said College until all suits for damages or otherwise as afore said have been finally settled and determined, and evidenced to that effect furnished to said College. (97, 83, 99)

Damages Consequence upon Abandonment. (94) In case of the corporation of "abandonment clause" it is expressly understood that all labor and material, whether built into the work or delivered upon the ground and all sums due the Contractor at the time of said abandonment or estopped or forfeiture, shall revert to and become the property of said College. (42, 55, 97)

Responsibility Concerning Materials. (95) The College shall be in no manner whatsoever responsible in any conceivable or possible way for the safety, security, damage, breakage or repair of any of the material, scaffolding, tools, implements, instruments, machinery, appliances or effects of the Contractor which he may have or may intend to use in the construction of the work. (68, 75)

Damages in Default of Completion. (96) In default of the Contractor completing the work by the time named in the contract the College or Architect, shall have the right to collect such sum or retain such sum from the amount due, or the contract as will represent the actual damage or expense that may have been sustained by such non-completion, except as otherwise provided. (48)

Forfeiture in Case of Default. (97) Should the Contractor fail to complete the work by the date specified for its completion in the contract he shall then forfeit to the College in this case, as due and liquidated damages, for each and every day which shall elapse after said date of completion, and while the work remains yet uncompleted, , the sum of _____ dollars, (\$ _____) which amount shall be deducted from the amount due the contractor at final settlement. (48,55,85,86,94)

Concerning Damages Caused by Delays. (98) No charge shall be made for delays, but should delays be occasioned through any fault, negligence or ~~part~~ on the part of the College, in this case, then the time of the contract shall be extended over a period equal to the time of such delay. (42, 55, 56, 39)

Deductions for Incorrect Performance. (99) Should the Contractor change the design or plan of any part of the work, or construct all, or any part of the same, not in accordance with the plans or general specifications or as directed by the Architect, either verbally or written without having made proper notification, nor having obtained express permission so to do, and at the same time the Architect decides not to order the work reconstructed, then the said Contractor shall be subject to such deductions for such misperformance from the face of his contract in an amount that may be determined upon by the Architect, such forfeiture being held as due and liquidated damages. (54,70,77,84,86,89,93)

X. ESTIMATES AND PAYMENTS.

Estimates and Progress Certificates. (100) Estimates will be made and progress certificates issued by the Architect from time to time as the work progresses, for materials furnished, or incorporated into the building, and for labor performed thereon in accordance to the meaning of all the plans and both the technical and general specifications and the amount to be paid to the Contractor shall _____ per cent (___%) of the amount of such estimate on the presentation of the progress certificate. The Contractor, however, is to furnish to the College and Architect (before a estimate and progress certificate can be issued to him) a receipt showing payment in full up to date from parties having furnished material, and receipts in full up to date from all workmen and laborers for work and labor performed on the work for which said estimate and progress certificate shall be issued by the Architect.
(42,45)

Payments made only on Certificate of the Architect. (101)

It is hereby further understood and agreed by and between the parties to this agreement that no payments shall be due or demanded by the Contractor, nor shall the College be in any way liable to pay or be in any way indebted to the Contractor for any sum or sums of money for work done on material furnished under this contract, or on account of or in connection with the contract or growing out of the completion of the work undertaken, whether by reason of alteration, deviations, additions, omissions, or otherwise, except, unless and

until the Architect shall have measured and estimated the same and shall have certified in writing that the same is due under contract. (42, 43)

Progress Certificate, no Relief. (102) And it is hereby understood and provided that progress certificates and payment of moneys thereunder shall in no way lessen the liability of the Contractor to replace bad or defective work, though the same may not have been detected at the time such certificate was given or acted upon. (75, 99, 106)

Estimates and Payments Withheld. (103) The Architect shall have full power to withhold the certificate for payment of any money to the Contractor after circumstances may have arisen which may indicate to him the advisability for such detention, as aforesaid, though the sum to be retained may be unascertained at the time of such withholding. All estimates will be indefinitely withheld until all orders of the Architect have been faithfully complied with by the Contractor. (42.43, 44)

Final Estimate. (104) The final estimate shall be made when the Architect is satisfied that the work is entirely and satisfactorily completed at which time the Contractor shall be entitled to the _____ per cent (___%) retained from the progress payments as balance due him on the contract, except as otherwise provided. (42, 43, 44, 45, 48, 82)

Decision of the Architect Final. (105) The estimate, cert-

ificate or final acceptance of work by the Architect, and his decision in any way concerning the same shall be final and conclusion, and such estimate, or decision, or both, in case any question shall arise shall be a condition precedent to the right of the contractor to receive any money or compensation for anything done or furnished under this agreement. (42, 43, 44, 45)

Final Certificate Conclusive over Progress Certificate. (106)

It is further expressly understood and agreed by and between the parties hereto that the action of the Architect, by which the Contractor is to be bound and concluded according to this Contract, shall be that evidence by his final certificate, all prior partial payments or progress certificates being made merely upon estimates, subject to the correction of such certificates, which final certificates may be made without notice to the Contractor thereof.

Contractor must Settle Outstanding Accounts. (107)

Before final settlement, at or any time the College may demand, the Contractor must settle all accounts for material delivered or work performed, as for his respective agreements for such materials or labor, before further progress certificates are granted or payments of money are made on the contract. (46)

Moneys Due College may be Recovered or Retained. (108)

All moneys due the Owner or Owners by the Contractor under any stipulation, herein, may be recovered by action, or may be retained out of their moneys then due, or which may hereafter become due from the said Owner or Owners to the Contract, Under this or any other con-

tract, or otherwise however. (55)

XI. COMPLETION AND GUARANTEE.

Connecting up Work. (109) In case contracts are awarded to separate contractors for various parts of the work, or for any work, the Contractor completing his work last, after other Contractors have completed their contracts for work which must be connected with that of his own, then said Contractor completing his work last must at his own expense, and as the Architect directs, properly connect or join his work to that already done, or must connect his work in any acceptable manner to such work as may be ready for such connections. (46)

Cleaning up. (110) When the work is supposed to be complete, all ^bdebris of all nature must be cleaned up and removed, and the plant or building put in a proper and respectable condition. Temporary structures must be removed, all the holes and trenches filled, mounds leveled, and such other work of cleaning up and putting work in proper shape and condition shall be done as may be required by the Architect who shall be sole judge in the matter? (46)

The Guarantee. (111) The Contractor shall keep the entire work so constructed by him, in good condition or working order for the period of _____ days except as may be otherwise provided: _____

_____ . That if during such time it is found that

any repairs are needed, in consequence of improper construction or
manufactory, then the said Contractor shall be notified and given an
opportunity to make such needed repairs, and in his failing so to do,
then the College may proceed to do the same and pay for the work out
of the moneys retained for such purposes. The beginning of such
period of guaranty shall be counted from the date of the Architect's
final certificate of acceptance of the work. (44,46)

PROPOSALS

for the

ERECTION OF AN ARCHITECTURAL BUILDING

for the

KANSAS STATE AGRICULTURAL COLLEGE.

at

MANHATTAN, KANSAS.

_____ ? _____ 19__.

Gentlemen:-

We _____
 contractors for the _____
 whose place of business is at _____
 _____ State of _____

having read the instructions and notice to bidders and also having read and examined the plans and both technical and general specifications for the Architectural Building for the Kansas State Agricultural College, to be built at Manhattan, Kansas, and having come to a full understanding of the meaning and intention of said plans and both the technical and general specifications, and being without any connection with any other person in making this bid or proposals for

(except with those whose names are herein specially mentioned), such proposes and hereby state that this proposal is in all respects fair and is also made without conclusion with any other person making proposals for the same work and materials, herein submit our bid, together with the alternate proposals for the work as follows:

| Item | Dollars. Cents. |
|------|-----------------|
|------|-----------------|

Item

Dollars. Cents.

| Y | Dollars. | Cents. |
|------|----------|--------|
| Item | | |

(119) The following named persons are interested with the undersigned in the contract:

Respectfully submitted,

Contractors.

Address _____

(21, 27)

(120) Will accept awards on sections _____

if not awarded

contract on whole work. (27)

(121) Names of individuals as well as all the members of the firm or company, and the names of the offices of the corporation, etc.

who are in any way interested in this contract: (3)

Names.

Addresses.

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |

(122) Names of sureties for the performance of the contract should the above signed be given the award: (7)

| Names. | Addresses. |
|--------|------------|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

CONTRACT. (35)

(123) This Agreement , entered into this _____ day of _____ A. D., 19___, by and between the Kansas State Agricultural College, Manhattan, Kansas, party of the first part and, _____, contract for _____ whose business is at _____ state of _____, party of the second part:

WITNESSETH: that for and in consideration of the payments hereinafter mentioned, and under penalty expressed in a bond hereto attached, are now referred to, are made a part hereto of this contract as fully as if herein written, and all terms and conditions on said plans and both technical and general specifications shall govern in all matters in connection with this contract as fully as if herein written, and it is mutually agreed that the consideration of this

contract as named in the proposal, shall be: _____

_____ the said written proposals

attached are also made a part of this instrument.

IN WITNESS WHEREOF, the said parties have hereunto set their hands and seals this _____ day of _____

_____ A. D., 19__.

(130)

Proprietors and
First Party. (39)
Address _____
_____.

(131)

Contractors and
Second Party. (46)
Address _____
_____.

(132)

To _____, 19__.

Gentlemen:-

I hereby certify that I have sub-contracted the work covered by this contract as follows: (38, 47, 40)

| Kind of Work. | Sub-contract. |
|---------------|---------------|
| The _____ | to _____ |
| The _____ | to _____ |
| The _____ | to _____ |
| The _____ | to _____ |
| The _____ | to _____ |
| The _____ | to _____ |
| The _____ | to _____ |
| The _____ | to _____ |

(133)

To _____ 19__.

The undersigned sub-contracts hereby, signifying their understanding of, and willingness to execute our part of the work in accordance with the whole plan and specifications.

Sub-contractor.

Signed this date

| | |
|-------|--------------|
| _____ | _____ 19__. |
| _____ | _____, 19__. |
| _____ | _____, 19__. |
| _____ | _____, 19__. |
| _____ | _____, 19__. |

(134)

BOND. (20)

KNOW ALL MEN BY THESE PRESENTS: That I _____

of _____
as principal, and _____

and _____

as sureties, are held and firmly bond in the sum of _____
_____ dollars (\$ _____) unto _____

_____ or assigns,
for the payment well and truly to be made, we bind ourselves, heirs,
executors, administrators, jointly and severally, by these presents.

Dated this _____ day of _____
_____ one thousand nine hundred _____

WHEREAS: Having entered into a contract with _____

to _____

at said _____, which contract is dated the
_____ day of _____ A. D., 19____, and to

be done in accordance with plans and specifications of said work.

NOW: the conditions of this obligation are such that if the
said _____

shall well and truly keep and perform all the conditions of this
contract on thier part, to be kept and performed, and shall indem-
nify and make payments and save _____
_____ as herein stipulated,

then this obligation shall be of no effect; otherwise it shall remain in full force and virtue.

Principal.

Surety.

Address.

Surety.

Address.

Seal.

Signature in presence of

(135) Surety's Declaration.

My resources amount to \$ _____

My liabilities amount to \$ _____

Net resources \$ _____

Attest, _____ Surety.

My resources amount to \$

My liabilities amount to \$

Net Resources \$

Attest, _____ Surety.

LIST OF DRAWINGS.

- Plate I. Basement plan.
- Plate II. First Floor Plan.
- Plate III. Second Floor Plan.
- Plate IV. Third Floor Plan.
- Plate V. Roof Plan.
- Plate VI. Front Elevation.
- Plate VII. Right Elevation.
- Plate VIII. Rear Elevation.
- Plate IX. Left Side Elevation.
- Plate X. Longitudinal Section.
- Plate XI. Transverse Section.
- Plate XII. Front Steps, Detail.
- Plate XIII. Door and Windows, Detail.
- Plate XIV. Stairs, Detail.
- Plate XV. Tunnel, Detail.
- Plate XVI. Elevator, Detail.
- Plate XVII. Roof Truss, Detail.
- Plate XVIII. Full Size, Detail of Casings, Jambs.

GENERAL SPECIFICATIONS.

General.

Contractor or contractors for this work is or are requested to carefully read the entire technical specifications hereto attached, together with the specifications for this work before making out his or their bids, and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

Contractor must visit the premises in order to obtain a correct idea of the present condition of the premises and the amount of work to be done.

All work must be done as directed by, and to the satisfaction of the Architect.

Drawings.

The various materials are generally marked in the drawings. Corresponding work to be of same material as that indicated.

Permits.

Contractor is to take out and pay for the necessary building permits.

Cutting for Other Contractors.

Mason must do all the necessary cutting for his work to make it fit that of the other contractors, and repair neatly after other contractors, all as directed by the Architect.

Hoists.

Hoists must be located so as not to interfere with other contractors more than is absolutely necessary. Consult Architect.

Recesses, etc.

Mason builds recesses in walls of suitable sizes for pipes, ducts, wires, etc., as shown or directed, all plastered with cement mortar from top to bottom, all smooth and even. Start recesses of sufficient depth to avoid offsets in walls above.

Leave openings for sewers and other pipes, of suitable size and location, and build up around same afterwards, all as directed.

For exact location of sewers, etc., see plumbers diagram and consult Architect.

Protect Work and Material.

All work and material must be protected from the weather, and this contractor will be held responsible for all damage to same.

Rubbish.

All rubbish, debris, planking, etc., in and around premises must be removed from time to time as directed by the Architect. All walls, floors, roofs, sills, iron work, etc., must be thoroughly cleaned of mortar and everything left complete and clean.

Planking.

The mason contractor will be required to furnish and set temporary plank to cover all floor spaces, in each story and maintain same in perfect repair until permanent under floor is placed.

This is for the protection of the workmen.

Mason must not carry up any walls above the floor joist until the temporary plank or permanent under floors are laid.

Approved Cement.

Where Portland cement is specified, use only fresh stock selected from one of the following brands:

Imported: Dykerhoff, Star, Alsen, Heyn Bros., Germanica, Mennerheim, Sangerdorfers, Joyslen, and Cordor.

Domestic: Wayend, Atlas, Alpha, Unlecouite, Soyler's, Empire, Star, Chicago AA, Peerless, Bronson, Wolverine, Owl, Universal, Lehigh, Nazareth, Wabash, Iola, of Iola, Kansas, and Independence of Independence, Kansas.

Where Natural cement is specified, use only fresh stock selected from one of the following brands: Milwaukee, Louisville, Utica and Fort Scott.

No other cement will be allowed on this work and the contractor will be held rigidly responsible for his work with reference to the tensile strength, etc., and he must select such cements as will produce the best results.

All cements of any of these brands that is damaged or does not stand such tests as to time of setting, tensile strength and hardness, as in the judgment of the Architect may be deemed proper, will be condemned.

All cement must be laid in place as soon as mixed and before it begins to set. Retempering cement or concrete will not be allowed.

All damaged or condemned cement or concrete must be re-

moved from the premises at once and new material put in its place at the Contractor's expense.

All mixing of cement must be done by mason, in approved manner, in exact proportion specified, all as directed by the Architect.

MASON WORK.

Survey.

The Contractor will employ an engineer to give the required lines and levels.

Batter Board.

The Contractor and Engineer shall lay out the building from the drawings, under the direction of the Architect.

For convenience in laying out the building, the Contractor is required to construct a wood frame around the proposed building, but ten feet larger each way than the building. Frame to be constructed as follows: Take posts 4" X 4" and 10 feet long, place in the ground ten feet apart, and so that the top of same will be 4 feet above grade line. Posts to be set perfectly plumb and true to a line, with the earth properly tamped around them. Spike to the posts 2" X 10" planks vertical with 2" X 8" planks horizontal (see drawings) these to be built perfectly square, with each side parallel with the sides of the building.

Excavations.

Remove from the premises all rubbish necessary to clean the building sites. Excavate for the areas, tunnels, drains, footings,

etc., to the dimensions and the the depths shown on the drawings, and do any other excavation required to fully carry out the work herein specified.

While excavating deposit the top soil in separate piles, make connection with the drains to keep the excavations and premises free from standing water. Shore up the banks, if necessary, in case it is so directed.

The concrete trenches are to be excavated to the exact depth required, the sides plumb, and the bottom level.

Back Filling.

As soon as the walls are built up to grade line, backfill against all outside walls with earth, well tamped down and puddled.

Grading.

The entire earth coming from the excavation of the footing, etc., is to be used to fill up to within 6" of the required grade line around the building, the surface to be brought up to the grade line with the top soil.

The surplus earth, if any, must be removed from the premises.

CONCRETE FOOTINGS AND FOUNDATIONS.

Cements .

All cements for this work shall be delivered at least ten days before being used, to admit of being tested, if so desired, and shall be kept stored in a dry and safe place.

Any cement found on opening the sack or barrel, to be lumpy or otherwise injured by age or moisture, shall be rejected.

Natural Cement.

May be either Louisville or Milwaukee cement, of quality of such that the tests shall give at least the following tensile strength: neat tests, one week. 80 # and four weeks, 135# per square inch. Pats of cement in air and in cold water shall show no signs of unsoundness.

Portland Cement.

Shall be Alpha, Wabash, Iola, Giant or Star, of quality such, that the tests shall give at least the following tensile strength: neat tests, one week 375#, and four weeks 450# per square inch, one-third mortar tests, one week 110#, and four weeks 140# per square inch.

A two-inch ball of cement allowed to set twenty-four hours in air and then placed in cold water which is gradually brought to boiling point, and then boiled three hours, should show no signs of disintegration.

Cement capable of passing the one-week test will be allowed to be used on the rock until the completion of the four-week test, but should the four-week test prove unsatisfactory, the use of the cement shall then be discontinued.

All tests when made, shall be made by the Architect or his representation, using the standard methods recommended by the American Society of Civil Engineers.

Footings.

Concrete footings to be put under all walls, piers, etc., to the depth, width and thickness shown on the various drawings.

Concrete for the same to be composed of approved natural

or Portland cement, clean, coarse, sharp sand and clean broken limestone (to pass through a two-inch or less ring) in the proportion of one cement, two sand and three stone, in case Natural cement is used; or one cement, two sand and five stone in case approved Portland cement is used.

The concrete must be mixed as follows: Thoroughly mix the cement and sand with another, then add (properly distributed) the stone with the proper amount of water, using a water tight box or platform. After being mixed put in a place immediately and thoroughly tamp into place, in layers not over 6" or as may be directed by the Architect.

As soon as a section of concrete footing is completed, cover the same with a layer of not less than two inches of sand, properly spread out to an even surface, same to be kept damp at all times, until the other work calculated to go on the same is ready to be constructed, in this case then the layer of sand is to be removed, the footings broom cleaned, ready to receive the new work. No new work will be started upon the footings until three days time has elapsed after the construction of the last footing, unless otherwise directed by the Architect.

Build boxes of two-inch plank to exact the concrete footing if necessary, or when and where so directed by the Architect. If necessary use sheet filling instead of boxes.

No concrete is to be dumped into trenches while standing water is in the same.

Architect or Superintendent is to be notified when this work will be started, as no footings are to be put in place until the ground in the trenches upon which they are to rest has been

thoroughly inspected and tested by them, as the sizes of the footings were ascertained by calculating that the soil would resist the pressure of two tons, to a square foot of soil. Should it in any case be found that the nature of the soil at any of the excavated trenches differ from that calculated upon by the Architect, he reserves the right to make such alterations from the original footings shown on the various plans as he deems advisable on the contract to be paid for, or deducted as the case may be upon certificate of the Architect.

All cement floors of basement and areas are to have a 6" cinder footing well tamped, with not less than 4" of Portland cement concrete made of one part cement and five parts, clean, coarse, sharp sand.

RUBBLE MASONRY.

All interior walls in basement, first and second stories and backing up of all ashlar work of exterior walls in basement, first second and third stories, from top of footings to full height, must be built to the size and dimensions as shown on various drawings, such as plans, sections, and elevations or any other drawings. The walls will be carried up perfectly plumb, true and level from one end to the other, and the entire job of rubble masonry to be a first-class solid job throughout. Use nothing but best quality of native limestone in the construction of these walls, approximately square and flat bedded.

All stone used to lay on their natural quarry bed, well hammered down. At least one-fourth of all stone used, to extend

two-thirds way through the walls, all other stones to be laid so that joints can be properly broken in order to give a thorough bond throughout the entire work. In no case will any one course of the stone wall laid in rubble work be to exceed 16" in height, and every course to be leveled up around the building.

In backing up the ashlar work used for facing the building the stone for the same must be selected for the respective courses and all made with very level beds, and so coursed that joint of the rubble will come opposite the joint of the ashlar work.

All walls to be made solid with mortar and spalls, the latter driven into the mortar and not thrown in and covered with the mortar, level on top without spalls, ready to receive floor beams, joints, etc.

The material for the rubble and ashlar masonry is stone secured from the native quarries, at or near Manhattan, Kansas.

Arches and Relieving Arches.

All exterior and interior openings are to have on the inside above the wood, stone or iron lintels, three rowlock arches, unless otherwise specified or shown on the various diagrams or drawings. Use an extra hard, well burned brick for the same, laid in same quality of mortar as specified under basement and foundation walls. All arches thus specified to be properly bounded in each layer. The centres for building or forming these arches will be built and put in place by the carpenter contractor and must not be removed until so ordered by the Architect or Superintendent.

Building in Arches, etc.

The mason contractor will be required to build in all iron

arches, rods, beams, or other material pertaining to the construction of this building.

Openings or Channels in Walls.

Should any cuttings for channels or opening through any of the walls (which may have been omitted) be necessary to facilitate any work pertaining to the building, the mason contractor, when called upon by the Architect to do so, shall execute the same free of charge, and any repairs necessarily caused by the cutting for the channels, etc., to be done with the best of materials, using Portland cement mortar, this also free of charge.

Bracing of Walls.

Thoroughly brace all walls, throughout the building as soon as they are of sufficient height, or as will be directed by the Architect, and the braces to remain until permission for their removal has been given by him.

Covering of Walls.

All walls to be covered with boards each evening after the working hours. Boards so arranged so as to shed water, and placed so that edge of board extends 2" beyond the wall on each side, and to be weighted down.

Mortar.

Mortar for foundation, interior basement walls, backing and laying of all cut stone work in basement story shall be composed of one part cement, two of clean, coarse, sharp sand, if natural cement is used; and one part cement to four of clean, coarse, sharp sand

if Portland cement is used. Mortar for all other walls to be made of one part fresh, white lime (approved by the Architect), and three parts of clean, coarse, sharp sand.

Leveling for Timbering, etc.

Mason must level off walls for each story and floor and ceiling beams or joists, by rod heights to receive beams, joists, hangers, plates, etc., without blocking. Rod must be used at least every ten feet in length of bearing walls and at all leads, plates, beams, etc. Walls for rafters must be brought to proper lines with even pitch as directed.

Inside walls that stop at ceiling joists, to finish level with top of ceiling joist.

Point up close to all frames and sills and between all beams but do not build close to end of trusses or large timbers, leave air space around all timbers.

All area walls and piers, also those portions of entrances which are not structural parts of the building proper, are to be built after the building is under roof.

PLASTERING.

General.

Contractor or contractors for this work is or are required to read carefully the entire technical specifications herewith attached, together with the specifications for this work, before making his or their bids, and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

All work is to be done at such times and in such manner as directed by and to the satisfaction of the Architect. Portions to be done in advance to other work wherever required for proper construction or deemed necessary by the Architect.

Plasterer will be held responsible and will be required to pay all damages to other work, particularly electric, plumbing, and heating regulation pipes.

This contractor shall examine carefully all grounds and furring before lathing, and see that they are accurate and secure, as no complaint on account of imperfect grounds, etc., will be considered as an excuse for imperfect plastering. Any inaccurate or insecure wood or metal grounds, or furring must be reported to the carpenter or Architect.

In case unfurred walls or partitions are out of plumb the respective contractors are to pay the cost of the extra thickness of plastering, where plastering is directly applied on the walls; but this contractor must notify the Architect in writing of the amount and prices before applying the plaster or no allowances will be made.

Grounds.

All grounds throughout the building will be $7/8$ inches thick.

Light.

Permanent windows will be put in before the plastering is done.

Heat.

Steam heat will be provided by the College in cold weather

if heating apparatus is in working order, but the College will not guarantee this, nor that it will be sufficient to dry the plaster, and the contractors must provide salamanders and heat when necessary, whether work is ready per schedule or not.

Patching.

The plasterer will be allowed extra for patching plastering when the same has been damaged by other contractors, the cost of the same being charged against the parties doing the damage, but the plasterer must return after the interior finish is in place and repair all defects caused by any fault in his work.

Tempering of Mortar.

Tempering of mortar must be done outside of the building and mortar must be deposited on special platforms or mortar board not dumped on rough floors. The contractor will be held responsible for damage by water to the floors.

Cleaning.

As soon as the plastering is done (except patching) the entire building and premises must be thoroughly cleaned of surplus plastering, rubbish, mortar boxes, etc.

Plasterer must protect all stairs, windows, finished floors, wood trimming, etc., with large drop clothes whenever patching is being done, as this contractor will be held strictly responsible for spoiling or damaging other work by plastering.

Lathing (a).

Parts to be Lathed.

Lath all ceiling in basement, first, second and third stories

and furred walls.

Lath all stud partitions, wood lintels and outside of elevator shaft.

Lath under part of stairs in first and second stories, also inside of all closets in all stories of the building.

Kind of Laths.

All lath to be of metal, of pattern that permits the whole mass of mortar to pass through and clinch on the back so as to inbed the lath in mortar and protect the backs from erosion. It must be stiff enough to be firm when attached to furring strips, 12 inches on centers.

The following kinds of lath are accepted as filling the above requirements: No. 18 Wire cloth, 3/8" mesh, Washburn and Moen St. George; Expanded metal lath A, No. 24, Gauge, U. Standard; Herringbone lath, No. 24 Gauge, U. Standard; Wankesla steel lath, No. 24.

Putting on Lath.

All lath must be perfectly straight, and all wire lath must be thoroughly stretched, closing tight against all walls and grounds and perfectly covering all wood and iron work.

All metal lath must be securely fastened with number 14 gauge wire staples, 1-1/8 inch long with barbed points not over 6" apart on every stud, furring strip or joist.

When expanded metal lath is used break joints must be used with every sheet and with particular care in lathing and fastening end of sheets. All ceiling lath must be lapped down on walls.

PLASTERING (b)

Pointing and Back Plastering.

Point around all outside openings between frames and brick and stone work to keep out the wind and weather, also back plaster between iron beams where such form lintels over windows.

Parts to be Plastered.

All lathing is to be plastered. All walls, ceilings, partitions, etc., of basement, first, second and third stories are all to be plastered.

Three Coat Work.

All lathing throughout the building is to be finished with two coats of brown mortar and a sand finish coat of plaster.

Hard Wall Plaster.

The hard wall plaster to be one of the following: Adamant, King's Winsor, Royal Rock, Diamond, Agatite, or any other hard wall plaster of equal quality will be allowed if accepted in writing by the Architect for this job is particular.

Hard wall plaster must be used for first and second coat as well as for finish coat as directed by manufacturers.

First coat on lath to be well fibered, troweled on and thoroughly scratched.

Second coat to be rodde~~d~~ true and straight.

The finishing coat will be a floated sand finish put on to a perfect, true uniform surface and floated with water for a fresco finish. (Sample finish to be made and shown to the Architect for his

approval before commencing with the work.)

CUT STONE AND ASHLAR WORK.

General.

Contractor or Contractors for this work is or are required to carefully read the entire technical specifications hereto attached, together with the specifications for this work before making out his or their bids and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

All cut stone are to be delivered at convenient places about the building from time to time, all as directed. All cut stone when delivered must be blocked up from the ground so as to avoid staining the stone.

At no time shall more cut stone be delivered at the building than the full supply for one story, (besides what is built in) and must be delivered in proper order as required in building.

All cut stone must be kept under cover at all times until delivered at building as all weather stained stone will be rejected.

Time.

If this Contractor shall delay the mason contractor by failing to set the stone specified for this contractor to set as rapidly as required by the progress of the building in accordance with the time scheduled, then the Architect is authorized to have such stone set and the cost of setting the same will be charged to this contractor.

This contractor must deliver all cut stone from time to time

as required by the progress of the building. (see time schedule)

The Contractor will be held strictly responsible for all delay caused by failure to deliver cut stone, properly cut and materials as well for delay in setting his portion of the work.

Mason Receipts Cut Stone Work.

Mason contractor or his foreman is to receipt for all cut stone that is specified to be set by him when delivered at the building in good order and mason contractor will be held responsible for the proper setting of same, and for all damage to cut stones receipted for after delivering.

All cut stones must be distinctly marked and setting diagram must be furnished to mason with or before the first load of stone is delivered.

Protection of Work.

All exposed cut stone (specified to be set by this contractor) will be protected in a thorough manner by the carpenter immediately after same is set but the same cut stone contractor must make the demand of the carpenter in proper time. Failing to do so he will be held responsible for any damage occurring to cut stone work.

Details.

Full sized details will be furnished for the various portions of the cut stone work. Work must accurately conform thereto.

Cutting, etc.

Cut stone contractor will be required to do all cutting of cut stone, including anchor holes, checking and back jointing to fit

iron and steel work, holes for down spout and other flows, raggles for sheet metal work, etc., as directed.

This contractor will be held strictly responsible for the proper cutting and fitting of the stone work.

Quality.

All cut stone and ashlar work must be from native quarries of established reputation and approved by the Architect.

All cut stone must be of uniform color (unless a variagated stone is specified) well selected, yard dried, and no imperfect discolored wintered quarried or surface stone will be accepted.

Before the contract is signed the successful bidder must produce for the approval of the Architect, as sample of each kind of stone with approved tooth chiseling, etc., properly marked as to what quarry it is from, and these samples will then be guiding for all stone delivered at the building. Size of samples to be 6" X 6" X 3" to 6" high.

The exterior of all front of the building, from the grade line up to the top of wall to be faced with stone of native quarries and to be cut to the sizes and shapes as shown on various drawings, diagrams, details, etc.

Corner Stone.

To be of size given and to have the date and other inscription, etc., as shown by a special diagram for the same furnished by the Architect.

The stone will be set under the auspices of the Architectural Club if then in existence, otherwise by the Architectural students.

This stone is to be set within the main entrance.

Cut Stone and Ashler Work.

All cut stone not specially indicated or specified, also tops of sills, steps, jambs ~~soffits~~ of lintels, etc, to have tooled finish.

All ashler work to have "rockface" finish very bold, rock facing to be not less than 2 inches, but a 1 inch marginal draft on all ashler work at all outward corners and openings.

Depth of Stone.

All projecting courses must be of sufficient depth to bring the center of gravity well within bearing, but in no case less than 4" bed, not less than is shown in drawings.

All ashler is to have solid beds at least 4" deep and every alternate course to have 8" beds as shown in sections, and each stone to be of equal thickness throughout.

Piers, quoins, etc., to be of size as indicated on drawings or diagrams, or details.

Drip.

All projecting courses and sills to have wash as shown or required, and to have drips cut on under sills.

Door Sills.

All outside doors, unless otherwise shown to have slip sills with threshold cut on stone, all accurately fit in place.

Lintel.

All lintels to be at least 10" longer on each end than opening and longer where shown on plans and of requisite depth for various

reveals.

All lintel courses are to be 18" and of cotto stone.

Wherever stone lintels are supported by iron, check out the stone in best manner for flanges and back joint to fit iron, this work to be done at the building to secure a neat and perfect fit.

Steps.

Steps to be cut with rounded edges, proper overlaps, so as to set with a slight pitch, tight, joints all true and straight.

Copings.

All wall copings, etc., shown to be cut stone, to be cut with drip on under side, on both sides of the walls and where not otherwise shown, the top of the copings to be pitched toward the outside of the wall. These copings to be clamped together with VU shaped galvanized iron ties let into bottom of stone at every joint.

Entrances.

Entrances to be built as shown in best manner and in strict accordance to the drawings and details, all well anchored in best manner.

Entrances that are not part of the main building are to be built after the main walls are completed, all as directed.

Settings

All cut stone and ashler work must be set in the best manner, all true, straight and level with uniform thickness of joints, all filled solid with lime mortar and raked out to a depth of 1/2" as fast as work is set.

Temporary wood wedges must be used whenever necessary to keep joints uniform. Mason contractor is to furnish mortar for setting all cut stone work.

All sills to be set with mortar bed under ends, leaving a clear space underneath to be closed later with pointing.

Particular care must be taken to keep the cut stone and ashler work as clean as possible, as no acid will be allowed in cleaning.

Cleaning and Pointing.

Point up all joints in cut stone and ashler work specified, in best manner with Iola Portland cement that will not stain stone. Point up under all sills, etc. No cleaning or pointing shall be done in freezing weather.

Clean down all cut stone and ashler work in best manner and remove all mortar and dirt from same, using stiff wire brushes, but no acid is to be used.

Clamps and Dowels.

Clamps and dowels must freely inserted, as the necessity of the work requires, and whenever the Architect at his discretion may direct these to be made of iron.

Special care must be taken to thoroughly anchor all projecting work.

Anchors.

Should the Architect find it necessary to direct, each stone under two feet in length to have one anchor and each stone two feet or more in length to have two anchors, each anchor one-fourth inch by one inch, one end turned down into the stone 1-1/2" and the other

end into the stone backing 3".

The length of the anchors to be made the thickness of walls of the different stones.

Sheet Metal, Gravel and Slate Roofing.

Work Included

- (1) All extra sheet metal marked on drawing or described inspecifications.
- (2) All sky lights.
- (3) Scuttle holes including flashings and counter flashing.
- (4) Conductor heads and down spouts.
- (5) Gravel roof, flashing and counterflashing.
- (6) Gutters, cornice and all bridging.
- (7)

General.

Contractor or contractors for this work is or are required to carefully read the entire technical specifications hereto attached, together with the specifications for this work before making out his or their bids and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

Work is to be kept level and plumb and to be put up in the best manner.

Full sized details will be given for all work.

Contractor must take his measurements on the building and prepare his work sufficiently in advance to be ready when the work is required. The work will be inspected at the shop and contractor is to notify the Architect as soon as the same is ready.

Gauge.

Whenever gauge is specified it shall be U. S. Standard gauge.

Guarantee.

Contractor is to guarantee the perfect and water tight condition of the work for the term of Three Years after date of final certificate and all repairs during that time must be made by the Contractor free of charge to the Owner. If any parts of the work which this contractor is to cover has not been done to his satisfaction by the other contractors, this contractor must in ample time notify the Architect of the change desired; Otherwise he will be held responsible for his work regardless of the conditions.

Copper

The following portions are to be sheet copper: viz. skylight scuttle holes, inclusive flashing and counter flashing, conductor heads connecting with down spouts, and all flashing or counter flashing for gravel roofs.

All valleys, gutter linings, roofs and flashings are to be of soft copper, 16 ounce for valleys, gutter linings and roofs, 12 ounce for flashings?

All other copper to be cold rolled copper weighing not less than 16 ounce per square foot.

All, seams to be made perfect and hidden wherever possible.

All soldering to be from the back.

Proper provision must be made for the expansion and contraction of all copper work, use only copper nails.

Copper Skylights.

Skylights on roofs to be of 16 ounce cold rolled copper.

Skylights to be formed of strong copper ribs and strengthened where necessary with wrought iron bars.

All exposed work is to be flashed down upon roof and counter-flashed, and made perfectly water tight with copper. All skylights, bars, cross-bars and bottom receiving box are to be provided with proper coppers and arranged to take off the condensed water.

Skylights to have provisions for ventilation as shown on drawings and details.

Glazed skylights 1/4" rolled American wire glass in best manner.

Copper Scuttles.

Scuttle holes on roof are to be covered with copper, flash and counterflash curbs of same with copper in best manner.

Down Spouts.

All down spouts are to be corrugated galvanized iron _____ diameter. All joints are to be sweat soldered together. Down spout to be firmly held in place with heavy rests or hangers.

There will be eight of these lines of down spouts.

Conductor Heads

Conductor heads are to be built on to the cornice. (See detail).

GRAVEL OR COMPOSITION ROOFING.

Felt

Cover deck roof with one thickness of dry wool felt, well lapped, and cemented full width of lap.

Also cover deck roof included in this contract with four

thickness of saturated felt, each sheet laid not more than 8" to the weather, fully cemented the full width of the sheet.

The felt to be either Cincinnati No. 2 wool felt or other equally good felt approved by the Architect. The felt must weigh not less than 15# to the square of 100 sq. ft., single thickness. All felt to be smoothly and evenly laid and well cemented, with not less than 24" in width between all sheets. All felt must be run in proper directions so that the felt will lap in proper manner to shed water.

Valleys and wherever felt changes directions, must be well lapped and cemented and finished with a cap sheet well cemented down.

Use clean, distilled, coal tar pitch of proper consistency to form a strong cement. For cementing between sheets use at least 50# to the square of 100 sq. ft.

Joinings

Particular care must be taken along all walls, felt to be flashed up and fastened with wood lath and joinings must be carefully made along all walls, around skylights, scuttles, and other openings, also at all gutters and down spouts.

Gravel

The entire surface of felt to be covered with an extra heavy coating of roofing cement and dry screened washed gravel.

Roofing cement to consist of equal parts of distilled coal tar pitch, with refined coal tar and rosin, and heated to proper consistency for a strong cement.

For graveling use at least 50# of cement and 1/6 cu. yd. of gravel to the square of 100 sq. ft.

Gravel must be heated if the work is done in freezing weather.

Guarantee

The Contractor will be required to furnish, at the time of signing the contract, to _____ a written guarantee to keep the entire roof covered by this specification in a perfectly water tight condition for a period of (5 years) after the date of the last certificate, and is to make all repairs during this time free ^{of} charge during this time to the _____.

In case the contractor requires more or better materials and workmanship in order to guarantee the roofs for the period stated, he must include the same in his bid, as the contractor will be required to guarantee the roof as above stated.

Slate Roof

The entire sloping portions of the roof will be covered with best quality Bangor Block Pennsylvania slate, the quality of which is to be guaranteed and accompanied by a certificate from the quarry, showing the quality of the same. This certificate must be placed in the hands of the architect before proceeding with the work. The slate to be put on in sizes 10" by 16" properly lapped, with all valleys, angles and breaks, laid in roofer's cement, and to be put on and guaranteed against leakage in every particular. Slater to furnish and put on the roof slating, using best quality tar felt paper, properly put in place, Paper to have 6" lap joints.

STRUCTURAL IRON.

General

Contractors or contractors is or are required to carefully read the entire technical specifications hereunto attached, together with the specifications with this work before making out his or their bids and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the architect.

This contractor must compare all figures on iron work for the general dimensions on plans and report to the Architect any discrepancies that may appear before executing the work.

This Contractor must submit two copies of all detail shop drawings of the structural iron and steel work to the Architect, one copy to remain in the Architect's office and the other to be returned to the Contractor with the Architect's approval, which approval must be received before any work is executed. The Architect will not be responsible for any error in shop drawings.

All material must be delivered in ample time at the building site painted ready for setting, from time to time in the order in which the respective parts will be required.

At no time must more iron be accumulated at the place than the full supply for one story. This Contractor will be held responsible for delays caused by the rejection of work as well as for painting and setting of iron and steel work.

In case of work to be set by the mason, this Contractor is to inform the mason which parts of the structural iron have been delivered so as to avoid any possible misunderstanding or exchange of beams and columns; in other words this Contractor's responsibility will not cease until everything is in its proper place.

All work to have its number plainly marked on the surface with white paint.

The levels for the setting of each beam is given by the figures which are prefixed to the letters. "B F". These figures give in all cases the distance from the top of finished floor to the of the beam at the place where the beam is located. For various floor levels see general drawings.

Cast Iron

All work marked "cast iron" on various drawings to be of tough gray cast iron.

All cast iron must be in accordance with the specifications given in _____ hand book. Test bars must be made from each heat of metal and actual tests made of same in the Architects presence. All castings that do not fulfill requirements of test, or are no free from cold-shuts, injurious blow holes, cracks, or other defects will be rejected. All rejected castings must be broken at once in the presence of the Architect.

All cast iron must be made smooth and exact and fitted together wherever required before being sent to the building. All joints in same to be made strictly water and weather proof.

Hangers

All hangers are to clinch over the upper edge of the I beams and also be nailed into wood fillings. They are to be either the Van Dorn or National types. (See detail sheet.)

Wrought Iron

All tie rods for beams, straps, strap and pin anchors, hangers, bolts, expansion bolts, lag screws, truss rods, stirrups for roof timbers, washers and plates for trusses, iron doors and

forged work to be of wrought iron.

All wrought iron must be tough, ductile, fibrous and uniform throughout in quality of a tensile strength of 50,000 lbs. per sq. inch, and elastic limit of at least 25,000 lbs. per sq. inch, and must stretch at least 15 per cent in 8 inches.

All the rods (marked T. R. on framing plans) must be $\frac{3}{4}$ " in diameter.

Bolts including expansion bolts, to be $\frac{3}{4}$ " in diameter.

No iron shall be used less than $\frac{1}{4}$ " thick.

steel

All structural shapes such as beams, angles, tees, and Z bars, also Z bar columns to be of steel.

All rivets to be of soft rivet steel.

All material and workmanship must be in accordance with the specifications given in _____. All work when finished must be true and free from twists, kinks, buckles, open joints or other defects.

No steel shall be less than $\frac{1}{4}$ " thick.

When two, three, or more beams or channels from girders or lintels, they are to be provided with close fitting cast iron separators, one at each end, and intermediate ones placed not more than five ft. apart or as otherwise shown.

All connections of beams to beams, beams to columns or mullions, and of columns to columns, to be bolted and the threads cut, to prevent the loosening of nut. Also bolt all beams and lintels resting on top of beams or lintels with at least two bolts for each connection.

The maximum clearance of beams framing into beams, is to

be 1/8". Beams connecting to columns must extend to within 1/4" of the face of column .

All beams and channells over 12" to have at least 12" bearing on walls, but in no case shall the beaming be less than 2/3 the depth of bearing plates.

All window liltels not otherwise shown are to extend at least ten inches beyond each outside jamb into the wall.

All angles shown in connection beams, channels, and girders, unless otherwise specially marked, are to be riveted on with rivets placed not more than 9" on centers.

All rivets to be 3/4" diameter, all holes for 3/4" rivets and bolts to be 13/16" diameter.

Anchors

Wall anchors to be standard wrought iron twisted strip and pin anchors bolted to beams with two 3/4" bolts for each anchor. Strips to be 3/8" by 3" welded to 3/4" pins 12" long, unless otherwise shown.

When beams are in line they must be strapped together with 3/8 by 3" wrought iron straps 12" long, bolted to each beam with 2 - 3/4" bolts.

Painting

All structural wrought iron is to be painted two coats of approved mineral paint before leaving the shop or factory, with Patterson - Sargents Co's. "Nabroc" carbon paint, or other equally good that is approved in writing by the Architect.

Second coat to be of different color than first. All work before being painted must be thoroughly cleaned from all loose scale, dirt and rust.

All planed or turned surfaces must be coated with white lead mixed with tallow before shipment.

No painting will be allowed during wet or freezing weather.

All riveted work to have the portions of surfaces that come in contact, also portions that are inaccessible after riviting, painted before assembling, all other iron and steel work must be painted at the shop.

STAIRS.

General

Contractor or contractors for this work is or are required to carefully read the entire technical specifications hereto attached, together with the specifications for this work before making out his or their bids and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

All work is to be delivered and set up complete at the building and left ready for finishing by the painter.

Protection.

The contractor must protect his work from all ordinary injury during progress of building and thoroughly clean off where necessary and turn over to painter in good condition. The carpenter will provide one rough flight of stairs for use until others are done.

Design of Main Stairs.

Contractor for main stairs is to figure on a stock pattern design. He is to prepare and furnish a scale drawing to the Archi-

fectin duplicate copies for his approval. The newels, etc. to be notched around and clamped to support the beams at floors and landings permitting an adjustment of newels on beams without cutting into the structure. The design of newels, rails, panels, braces, etc., should be of stock pattern design.

MATERIAL AND CONSTRUCTION.

General

Contractor or contractors for this work is or are required to carefully read the entire technical specifications hereto attached, together with the specifications for this work before making out his or their bids and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

Railings

Stair railings are to be substantially braced and particular care taken to make all balusters perfectly secure against side pressure from a crowd. All work in connection with the railing must be smoothly finished and accurately fitted.

Hand Rails

All stairs from basement floor to first, second, and third stories to have wood hand rails.

Wood hand rails will be furnished by the carpenter from stock patterns.

CARPENTER WORK.

General

Contractor or contractors for this work is or are required to carefully read the entire technical specifications hereto attached, together with the specifications for this work before making out his or their bids and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

This Contractor will be required to furnish all materials and labor necessary to entirely complete the carpentry, also all other items included in the specifications, as directed by and to the satisfaction of the Architect.

This Contractor must visit the premises and must figure on doing all carpentry work necessary to complete the job in accordance with the meaning and intent of the plans and specifications.

Contractor's attention is particularly called to the technical specifications which is a part of this specification.

Carpenter shall arrange for space at the mill in which painter can paint on back, fill and varnish first coat on all interior varnish.

Contractor is to protect all exposed cut stone steps, stone, or any other material which may be easily damaged, also to protect all window and door sills in a thorough manner as soon as frames are set.

This in addition to the protection by other contractors.

Put up temporary stairs four feet wide for one main stair, story by story while the building is in progress of erection, and form the steps of boards full width of tread to serve the different mechanics. Treads to be not less than 8" wide and the rise not more than 8" and provide hand rails on one side at least.

Contractor is ^{to} put up strong temporary barriers in front of all well holes and all other exposed openings and stair ways to prevent accident.

Close up all openings by putting in the glazed sash to protect the plastering, etc. Main entrances to be closed temporarily with partitions. Fit in sufficient glazed sash in same and in setting allow space to put in doors and frames of entrances without interfering with enclosure.

Carpenter is to put up temporary doors for all entrances, provide hardware for the same and keep them in repair.

Carpenter is to do all necessary cutting and fitting of wood work as directed by the Architect and for all other mechanics on the building and neatly repair after same.

Build temporary privy for use of workmen and remove same and contents when building is completed. The carpenter and Contractor must erect and maintain a suitable water tight temporary frame shed not less than 10' X 16' with portion fitted up as an office when plans and specifications can be kept for ready reference all as directed.

The carpenter as the principal contractor of the building after the plastering is completed and the one whose material is most likely to damage the plastering, will be held responsible for all damages to the plastering not caused by defective plastering and which cannot be proven to be the fault of other contractors.

Level Walls

Furnish mason with rods for heights for all bearing walls. If walls are not perfectly level the mason will level up the same with slate laid in Portland cement mortar. Wood blocks will not be allowed.

Curbs for Scuttle House, Ventilators, Skylights, etc.

To be 2" X 12" on narrowest width unless otherwise detailed, all accurately bolted to frame work, scuttle doors to have hinges and good padlocks and keys, hinges to be extra heavy ^{8"}wrought steel, hinges galvanized and with brass pin, this hardware and bolt to be furnished by the carpenter.

EXTERIOR FRAME AND SASHES.

Material

All, exterior members of windows and doors frames are to be of "C" white pine, except pulley stiles, partings and pendulum strips of window frames to be straight grained red or white oak. (See full sized details).

Back lining and inside linings of window frames to be good sound No. 1 common white pine.

All exterior sash and doors to be straight grained white pine with oak veneer on the inside.

All frames and sash must be strictly in accordance to full sized details, and all lumber must be absolutely free from sap.

Paint Frames

Prime all soft wood frames on all sides with pure white lead

mixed with lamp black and pure bioled linseed oil. This priming to be done by the carpenter at the mill.

Pulley stiles must be primed with boiled linseed only.

Outside Door Frames

To be 1-3/4" plank to be rabbeted, unless otherwise shown, full sized details will be furnished. If door transoms shows no sash the glass will be set in rabbet in frame held by loose moldings. No door frames to put in place until so directed by the Architect.

Box Window Frames

All window frames with meeting rail sash are to be boxed for sliding sash as detailed.

All box window frames not otherwise detailed are to be made strictly in accordance with detail marked "Standard window frames".

Form grooves for weights where necessary to. Take care to have outside lining of frames nailed to back lining in especial strong manner with 10 d nails space not more than 8" apart. Back lining of frames must be in one piece from top to bottom of frames, unless otherwise shown.

Pulleys

For all box frames, furnish for both upper and lower sash special 2-3/4" turned and polished noiseless wheel axle pulleys. (See hardware specifications).

Fit all sash pullies to frames but do not put them in place until ready to hang sash. No window frames to be set in place until so directed by the Architect.

Inside Stops

Inside stops for windows and for door frames must not be delivered or put on before the time these openings are trimmed. Inside stops for windows must be made to take shade adjusters. Consult Architect. Stops must not be put on until all varnishing is done.

Settings

All frames must be set plumb and true and secure in that position with braces and the carpenter must see that they remain in that position and the braces are not disturbed by other workmen until the frames are entirely walled in. Before setting the frames put a shone in the center of same to keep the sides from being pressed together by the masonry, this shone to remain until the walls are up. This in case of frames should be ordered set in place before the walls are up.

Anchors

Provide anchors for all window frames of $3/16$ " X 1" iron about $8\frac{1}{2}$ " long, as shown on detail of frames. Furnish one for each side of frames and fasten firmly to frame at center of height with two screws for each anchor. Put similar anchors on all outside door frames at middle and bottom on each side. This in case the frames should be ordered in place before the walls are up.

Sash and Fittings

All sash to be $1\text{-}3/4$ " thick.

All outside window transoms and unless otherwise shown and directed are to be hinged at the bottom.

All meeting rail sash to have stiles of upper sash extending below.

All sash to be carefully fitted so as to run smoothly and easily.

Furnish and hang sashes in best manner with No. 12 Sampsons' "spot" or No. 10 old braided sash cord. Provide cast iron weights to exactly counterbalance sash.

Furring

Contractor to do all necessary furring of whatever description ordered by the Architect. In order to construct, neatly finish, etc. any of the different works coming under the carpenter's work, or under any sub-contractors work. All outer walls to be plugged whenever necessary to obtain a solid nailing. Use wood wedges or plugs for the same behind any furring or wood grounds to produce a straight or plumb line.

Wood Lintels

Furnish and place over all openings except where iron lintels are provided and also behind iron lintels where shown or required, segment shaped wood lintels of timber of proper height to form centers for arches, face of lintels in unfurred walls to be kept back one inch from face of wall and must be furred for plastering.

Wood Bricks will not be Allowed

Carpenter will furnish wood strips $\frac{1}{2}$ " X 3" for mason to wall same into wall jambs in place of mortar joints for fastening of frames etc. Exact location of same to be given by the carpenter to the mason

Grounds

Put up grounds to regulate the thickness of plastering and secure the casing of all doors and windows and for trim, picture mold,

Bases, etc., all to be as will be directed by the Architect.

All grounds shall suit the details of box work and all grounds must be perfect to a line from one end of the wall to the other, and must be perfectly plumb and straight.

All strips used for grounding are to be cut off from new stuff, free from any knots whatever.

Clear Building and Premises

As soon as the building is ready for lathing this contractor must clear the entire building and premises of all dirt, rubbish, etc. of every description, whether made by this contractor or by others, so as to leave the entire building and premises clear when plasterer takes general charge of the premises.

As soon as the building is ready for painting, and again when the building is completed, this contractor must clean entire building and premises clear of all dirt, rubbish, etc.

In case this contractor fails to do this work within three days after written notice, then the Architect is hereby authorized to have same done and charged against this contractor.

Finished Wood Floors

The entire floor surface of Basement, first, second and third stories not occupied by cement or tile floors, will be overlaid with 7-1/8" X 4" first quality vertical grained, fir or yellow pine flooring, all to be kiln dried, properly selected, and driven into place by using boards for this purpose, nailed to each bearing and double nailed through the heading joints with finish nails. In no case will any of these finish floors be put down until the plastering or all other rough work in the building is completed.

After the floors are in position, plane off all uneven portions and head joints. All flooring to be well seasoned.

STANDARD FINISH.

Kinds of Wood.

All interior finish throughout the building will be clear yellow southern pine, unless otherwise mentioned.

Quality

All finish must be thoroughly seasoned, kiln dried and guaranteed against shrinkage, and must be clean and smooth, suitable for a finish in the natural color. Wood must be free from machine marks, and the contractor will be required to smooth by hand with smoothing plane and sand-paper wherever necessary.

The finish of the various parts of the interior is shown on scales drawings, to which the Contractor is referred for information as to all special features.

Details

Full sized details will be furnished for all wood work throughout the building. Follow these details exactly in the preparation and construction work.

Architrave

All architraves must have each piece gotten out without splicing except circular work. Avoid all straight mitres, wherever practicable the flat portion must be cut square, and the moldings only mitred.

Door Jambs

Unless otherwise detailed, all interior door jambs to be 1-3/4" thick with rabbets. All as shown in full sized details. Provide hanging stiles and friction strip across top for all double swinging doors.

Doors

The sizes of all doors are figured on the drawings. (See detail for panneling of doors) All marked "S" or "SD" are to be sash doors.

The outside of entrance doors to be of clear white pine, inside to match adjacent finish and to be 2-1/4" thick.

All doors coming in connection with hard wood finish shall have each side match adjacent finish. All such doors to be veneered both sides on laminated white pine core.

All other doors in the building to be 1-3/4" thick, except the short doors for the toilet room partitions etc., where the doors are to be detailed.

All doors not otherwise detailed, to be molded on the solid with moldings copled, and all to be blind morticed, and tenoned, glued and wedged.

Sash doors to have loose molding on one side to hold glass.

All doors except double swinging doors and short doors for compartments in toilet rooms, to be hung on three butts hinges.

All double swinging doors to have stiles neatly rounded off.

All double doors to have double astragals on edges as per detail.

Threshold

There will be no threshholds under any of the doors.

Transoms

Doors to have transoms where indicated on sections or scale drawings or details, or where marked with a letter "T" on plans, with molded transoms bars and hinged transoms as directed.

Windows

Stops are not to be put in until all the varnishing is done. Put on temporary blocks to hold sash until stops are on. Unless otherwise specified, put on all stop beads for windows with screws, and spaced within 6" of each end and not more than 18" apart. (See hardware specifications.)

All window stool to be detailed -- kerfed on under side.

Finish the windows complete as shown in full size details.

Interior Transoms and Sash

All frames for sash in inside walls to be constructed same as door jambs under similar conditions.

Sash for these frames to be yellow pine and 1-3/4" thick, and hung as shown in full size details.

Ceiling Sash

Under all skylights provide ceiling sash 1-3/4" thick in molded frame.

Wainscotting, etc.

Provide and put up yellow pine wainscotting throughout _____

_____ rooms to the height shown on drawings.

All detailed and nailed securely to every strip with _____ nails.

Provide and put on wainscotting cap, quarter round, etc., complete, all as per full size details.

Base

All portions of rooms having wood floors in basement, first, second and third stories to have molded or beveled wood base, as shown in details.

Picture Mold

Furnish and put up in all rooms, and halls, picture moldings as shown in details. This molding to be separate or the form part of the general finish as shown in drawings, and to be of same material as other finish.

Door Steps

Furnish and put in place rubber tipped red or white oak door steps behind all doors throughout the building.

Hook Strips

Provide all closets, cloak and toilet rooms with hook strips, same to be yellow pine of the proper width to receive the clothes hooks and of proper length as will be directed by the Architect. Strips to be moldered on all sides as shown in details.

HARDWARE. (See sheet)

Basement

First Floor

Second Floor

Third Floor

Specify, butts, locks, etc., and No. and direction of opening.

Miscellaneous.

Note: Hardware to be of Sragent manufacture and of numbers and description as given in the above schedule. Variations from the same will not be allowed. All to be Brown-Barff finish.

PAINTING AND GLAZING FOR ARCHITECTURAL HALL.

Painting.

General

Contractor or contractors for this work is or are required to carefully read the entire technical specifications hereto attached, together with the specifications for this work before making out his or their bids and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

Care should be taken that all wood is thoroughly dry before applying finishing materials.

All finger marks, dirt, grease, or other objectionable material shall be carefully removed by the painter before commencing to fill varnish or paint.

In painting new work all knots, sappy places, shall be covered with pure grain alcohol shellac before applying priming coat.

In painting new work all nail holes, cracks, etc., shall be filled with putty, same color as paint, after priming coat.

In varnishing after coat of filler no painting or varnishing of outside work will be allowed in wet or freezing weather, nor of inside work except the building be properly located, to at least 65°F.

All paint to be well brushed out, all varnish and all fillers to be applied in a workmanlike manner, and applied as furnished by

the manufacturer, without any thinning or addition whatever, except as noted.

Sufficient time will be allowed between coats to allow the preceding coat to become thoroughly dry before applying succeeding coat.

All material shall be brought on the job in the manufacturer's original packages, certificate from manufacturer to be placed in the hands of the Architect, before proceeding with the work, setting forth the quality and quantity of the material purchased.

Painting Exterior Wood Work and Metal

All exterior wood and metal work (Except as otherwise specified) shall be painted with three coats of the Patterson Sargent Co's B.P.S. paint. Color selected by the Architect as follows: priming coat shall be B.P.S. paint, same color as final coats, reduced with a gallon of pure raw linseed oil to each gallon of paint.

Second coat will be of B.P.S. paint, same color as final coat, reduced with sufficient pure turpentine to cut the gloss.

Third coat will be of B. P.S. paint of same color selected by the Architect and used as furnished by the manufacture without any thinning or addition whatever. Each coat must be well brushed out.

Pulley Stiles

All exterior oak members on window frames to be thoroughly oiled as no paint on the same will be allowed.

Painting Leaders, Gutters, etc.

All leaders, gutters and all other metal work not otherwise provided for shall be painted with one coat of B.P.S. "Nobrae" black paint, followed by two coats of B.P.S. paint, all well brushed out.

the color selected by the Architect. All exterior cast iron work to be sanded with each coat of paint.

Varnishing Interior Wood Work, Natural Finish Oak

All interior wood work throughout shall be filled with B.P.S. hard wood filler, color selected by the Architect followed with one coat of B.P.S. Nisoron liquid filler and finished with two coats of B.P.S. Nisoron Interiors finishing varnish. The gloss shall be removed from liquid filler and first coat of varnish by rubbing lightly with the grain, with No. 00 sand-paper.

Glazing

All exterior windows and doors to be glazed with best American polished plate glass. The doors leading from toilet rooms to office or corridors to have chipped plate glass pannels with proper name ground on same. All other interior doors, transoms, and all windows in glass partitions to have crystal chipped plate glass panels.

All glass to be well back puttied, spriged and left clean after being set in place. No imperfect glass will be allowed to be used. All measurements for all glass must be taken from the building and to be further understood that all of the glass throughout the building must be thoroughly cleaned before acceptance of the building is given.

STEAM HEATINGS.

General.

Contractor or contractors for this work is or are required to carefully read the entire technical specifications hereto attached,

together with the specifications for this work before making out his or their bids and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

Radiation

There will be a total of _____ feet of direct radiation distributed in the different rooms and corridors and as shown on the plans.

Radiation will be what is known as the cast iron sectional three-column radiators of the Ropoco pattern, or other radiation of equal quality and similar design. The Architect to be the judge of what is equal. Radiators shall not be less than three columns and when space is not large enough for three-column radiators the Contractor must furnish the National four-column radiator. Where radiators are placed under windows they must not extend above the window sills and the Contractor must furnish the radiators with center of radiator exactly under center of window. The location of radiators is shown on the plans and they must be placed as shown, as they are exactly where wanted. Where radiators are not under windows they may be 38" or 44" high.

Valves

There will be brass mounted, iron body gate valves on both the steam and return pipes where the mains enter building. These valves to be _____. Each radiator will be fitted with a heavy brass radiator valve, with union coupling, wood wheel handle, nickle plated all over. The valves are to be _____. Each radiator will also be fitted with a _____ vacuum air valve.

Pipe and Fittings

The plans show the arrangement of the piping, and the sizes, the location of the main steam pipe, returns, riser pipes and all branches supplying radiators with steam.

The basement radiators will be taken off the main separately from the first, second and third floors, and they must be run as shown and sizes marked on plans. They are to be run in trenches (See section of trenches), underneath basement floors.

All pipes 2-1/2" and over may be full weight mill steel pipe, but all pipes 2" and smaller must be full weight genuine iron pipe. All pipe 1-1/4" and smaller must be butt weld pipe, and 1-1/2" and larger to be lap weld pipe. The grade of the pipe shall not be less than 1" in ten feet in length of piping, and there must be no low places or pockets anywhere in the system. The piping must be so run and graded that the water of condensation will flow freely through the pipes back to the large mains by gravity only, and without any unnecessary snapping or pounding of the pipes.

The main steam and return pipes in tunnels, in buildings will be run on pipe chairs and rollers. These chairs to be placed about every ten feet apart under the main steam and return pipes, the chair to be fastened solid, so the rollers will roll easily.

Inside of tunnel at point where it enters building, provide for expansion of pipes, either by using expansion joints with brass sleeves or by some other device acceptable to the Architect. Branch pipes connecting the mains with radiators or risers, will be taken off the mains with 45° elbows and have a swinging joint at foot of risers to provide for expansion in riser pipes. The branch to be of sizes as shown on plans. Riser pipes must always be put in perfectly perpen-

dicular and in a neat manner. Where couplings show in riser pipes they must be as near the floor as possible and where there are two or more risers in one room the couplings in the riser pipes must all be the same height from the floor. The grade of the main steam pipes, return pipes, branch pipes and the true perpendicular of the riser pipes must be established by the use of the spirit level. The risers to the first, second and third floors will be off set to within two inches of the walls by use of cast iron off sets. These offsets must be cast iron in one piece and must not be made by using 45° elbows or elbows of any kind. The radiators in basement must be taken off of separate connections to mains and must not be taken off from riser connections to floors above.

All fittings used in the work must be heavy pattern gray, cast iron, beaded fitting of best make. All threads in fittings and on pipes must be clean and sharp, no broken or mashed threads will be allowed to be used in the work. Where the two mains connect into the return pipe the connection will be made by using separation tee to insure perfect circulation.

Flange Unions

There will be a flange union on both the steam mains and return pipes just inside the building.

There will also be a flange union on each branch piece, connecting the main with radiators and risers. All flange unions must be the "Dorts" patent flange union so as to make a tight joint without using packing, whether in or out of alignment. Flange unions with packing will not be allowed on the job.

Floor, Ceiling, Plates and Tubes

Where pipes pass through the floors of ceilings, or where

they pass through the walls, they will be run in the "patent" "Vosburg Floor Thimble".

These floor thimbles to have nickel plated plates on each end of the tubes.

Painting

After the plant is installed, the contractor must thoroughly clean all radiator and riser pipes, and all radiator and riser pipes must be neatly painted or bronzed in colors to be selected by _____.

_____ . The ornamental part of the radiators to be touched up in different colors of bronz from the body of the radiators.

Carpenter Work

All carpenter work necessary to this part of the work to be done by the steam heating contractor.

Covering

All steam mains, return and branch pieces under basement floors, and in tunnel will be covered with a wool felt covering of best quality, same to be ⁿlied with asbestos and to be 7/8" thick. This covering to be a sectional covering in lengths about three feet long. Covering to be put on with brass bands, using three brass bands to every section of covering. There will also be a canvass covering over the wool felt, this canvass to be pasted down smooth with paper hanger's paste. Samples of this covering are to be submitted to the Architect for his approval before ordering for the job.

All fitting under floors, in tunnels to be covered with asbestos cement troweled smooth to make a finished appearance.

Rubbish

At completion of labor or work, or at any time designated by the Architect, the Contractor will clean up all rubbish made by the steam fitters, and remove the same from the premises leaving the building in a clean and neat condition as far as their work is concerned.

Test

On completion of the steam heating plant and before the covering is put on the Contractor must make a thorough test of the heating plant with thirty pounds of pressure. All leaks that may appear in piping must be made perfectly tight and the test continued until the piping is perfectly tight. In case there is any split pipes or cracked fittings in the pipes they must be taken out and new put in their places.

The test must be made in the presence of the Architect or some person authorized by him to be present and see that the test is properly and satisfactorily made.

Materials and Workmanship

All of the materials used in this work must be the best of their respective kinds as specified herein. All work must be first class in every respect and none but skilled mechanics will be allowed on the job. In case any of the material used is not up to the specifications or is inferior material the Architect will reject the same and any material so rejected by him must be immediately removed from the premises. If the Architect shall consider a workman unskilled or detrimental to the work, he may at his discretion order him from the work, and in such case the contractor must immediately provide

a suitable man in his place.

Finally

This specification is intended to finish a complete heating plant and in case there is anything necessary to make it so and not mentioned herein the steam heating Contractor will furnish things without additional cost. It is intended to heat the rooms to 70° F at a temperature of 25° below zero on the outside, and in case the bidder thinks there is not sufficient radiation to do so, he must furnish enough radiation to heat them to that temperature.

PLUMBING.

General

Contractor or contractors for this work is or are required to carefully read the entire technical specifications hereto attached, together with the specifications for this work before making out his or their bids, and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

Water Supply

Run from point three feet outside of walls with a 1-1/2" galvanized iron water pipe as shown on plans. Run all galvanized iron water pipes in basement of sizes as shown on plans. The riser pipes for the different fixtures in the toilet rooms will be 3/4" galvanized iron pipes. All branch water pipes for the different fixtures will be run under the floors and will be extra heavy lead pipes as follows:

Supplies to water closets..... 1/2"
 Supplies to laboratories 1/2"

Supplies to urinal 1/2"

where two or more fixtures are taken off from one pipe same will be 3/4". All water pipes should be run on grades so they will entirely empty when shut off at chick and waste cock. All exposed supply pipes in toilet rooms and two laboratories will be nickel plated brass of full weight (iron pipe size), where pipes pass through floors or ceilings they will be fitted with nickel floor and ceiling plates. All fittings on galvanized water pipes will be heavy pattern galvanized malleable fittings with beaded edges.

Soil pipe

Furnish all soil pipe and put same in as shown on plans. Continue all ends of all branches of soil pipes up through the roof for ventilation. There will be blank stock of soil pipe and stock of run through the roof. All soil pipes must be what is known as extra heavy soil pipes, painted inside and outside while hot with black asphaltum. Changes and direction of soil pipes with "Y"s and 1/8 bends. At all changes of direction of soil pipes and at foot of each riser furnish and put in place clean cut screws so as to clean out sewer in case of stoppage. Weights of soil pipes shall be as follows:

| | |
|----------|-----------------------|
| 2" | 5-1/2 pounds per foot |
| 4" | 13 pounds per foot |
| 6" | 20 pounds per foot |

All joints in soil pipes will be made perfectly tight with molten lead and oakum, well and thoroughly corked. Where soil pipes pass through roofs they will be made tight with 6" lead flashing.

After soil pipes and vent pipes are all in place they will be filled with water and tested. Any leaks they may appear must be immediately repaired and where crack fitting on pipe is found the same must be removed and new ones put in. Test to continue until all leaks are stopped.

Same to be tested in the presence of the Architect and accepted by him. All connections between soil pipes and lead pipes will be made with lead bends and brass ferrules to be wiped onto lead bends with molten solder and calked into soil pipes with molten lead and oakum.

All joints on lead pipes whether lead bends, lead waste pipe, or lead water pipe, must be made with what is known as "Wiped Solder Joints" no "cup joints", or joints made with a soldering iron will be allowed on the work.

Waste Pipes

Waste pipes underneath floors in toilet rooms connecting the different fixtures with the soil pipes will be light lead waste pipes. These lead waste pipes to be connected with soil pipes with brass ferrules wiped lead pipe and calked into the soil pipe. All waste pipes will be run on a true grade so as not to allow water to stand in them. All waste pipes exposed in toilet rooms and laboratories to be nickel plated brass pipes.

Ventilation

The trap of all exposed fixtures will be vented from the crown of each with a pipe of same area as the trap except for water closet. The vent for water closets will be of 2" pipes. Said vent pipes to run to and connect to the soil pipe not less than two feet above

the highest fixture or run up to the roof separately where two or more vent pipes are drawn together before connecting with soil pipes. The size of the pipe will be increased according to the instruction of the Architect. Contractor to consult Architect before running vent pipes.

All vent pipes exposed in toilet rooms and to laboratories will be nickel plated and all other vent pipes shall be genuine galvanized wrought iron pipes. No vent pipe will be smaller than 1-1/4" in diameter, internal. All fittings in vent pipes to be malleable galvanized iron fittings with beaded edges and all joints to be made perfectly water and air tight. Vent pipes to be tested with water.

Excavations

Plumbing contractor to do all necessary excavating and refilling for waste and soil pipes. He must remove all surplus earth from the premises. All leveling of trenches shall be done by tamping the earth around pipes every foot until even with the surrounding ground.

Check and Waste Cocks

Just inside of wall on the 1-1/2" pipe place a check and waste cock with handles for shutting off and draining the entire system of plumbing. All pipes to be graded back to this point so as to drain perfectly dry.

This check and waste cock to be placed in a brick pit 18" long and 12" wide. Pit to be cemented inside and to have a cover. Plumbing contractor to furnish and build this pit.

On all risers and on supply to each toilet room, place stop cocks at convenient points. Same to have lever handles and to be pattern of stop cocks.

In addition to this each fixture will have a stop cock on the nickel plated supply above the floor.

Water Closets

Furnish and put in the number of water closets shown on plans. All closets to be the "Capix" siphon jet water closets with extra large waste and trap way as shown in _____ with plain bowl. Closets to be made of extra heavy Duro-ware. Closets to have nickel plate flush and supply pipes (iron pipe size) with stop cock with a loose key No. 16 seat operating "Bentlow" copper lined oak tank with bent round corners. Tanks to be lined with 16 ounce copper instead of the ordinary lining. Tanks to be supported with nickel plated brass brackets. Same to be fastened to the wain-scotting with nickel plated brass expansion bolts.

Furnish each closet with a No. 1 oak seat with operating attachment, brass floor flanger with rubber gasket. Closets to be connected with soil pipes with lead bend calked into soil pipe with molten lead and fastened to brass floor flange with molten solder.

Coat Hook and Paper Holders

Put in each closet enclosure two nickel plated brass coat hooks as shown in _____ and one nickel plated brass toilet paper holder as shown in _____.

Urinals

Furnish and put in urinals as shown in plans. Urinals will be siphon jets, each urinal will be supplied with an automatic flushing tank except that they will be on the same style and pattern as the water closet tanks. Tank for one urinal will be No. 1 and for two urinal will be No. 2 and will be supported with nickel plated

brass brackets fastened to wainscoting with nickel plated expansion bolts. There will be a nickel plated brass flush pipe connecting the tank with the urinals. Each urinal will be furnished with a nickel plated brass inlet connection and an outlet connection. The supply pipe will be nickel plated when the same is exposed to the toilet rooms.

Lavatories

Furnish and put in bowl lavatories, bowls as shown on plans. Lavatories will be of Vermont marble 22" X 48" in size with 12" box and ends. Marble to be of best Vermont white marble 1-1/4" thick and will be deeply counter sunk and have roll edges. Counter sinking to extend around and back of seats for cock holes, leaving raised seats for faucets.

Basins will be oval 14" X 17" plain white earthen ware with overflow molded in basin. Each basin to be bedded in plaster of Paris and secured to lavatory slab with four brass basin clamps. Each basin to have approved " Fuller " pattern faucet, 6" safety chain with rubber plug and nickel plated chain stay. Each basin to be supplied with cold water through nickel plated brass supply pipes (Iron pipe size) with stop cock with loose key. Supply pipe to have air chambers to prevent pounding in pipes. Lavatories will have nickel plated brass connection waste with 1-1/2" nickel brass trap with a waste to floor and vent to wall.

Slabs will be supported by nickel plated brass ornamental brackets.

Each bracket securely fastened to wall with nickel plated expansion bolts.

Furnish with each lavatory one 3/4" outside diameter nickel plated brass towel rack, not less than 24" long, provided with ornamental end caps to be provided and secured with nickel plated brass brackets ~~with~~ wainscoting near each lavatory as directed by Architect.

Where pipes pass through floors or walls they will be fitted with nickel plated brass plates.

The corner lavatories will be 22" X 24" Vermont marble, counter sunk same as two bowl lavatories except the trap. That will be furnished with 1-1/4" nickel plated brass trap with waste to floor and vent to wall. There will be a towel rack for the corner lavatories.

Closet partitions, Slate partitions, etc.

(Give description of closet partitions, Each door to have double swing, finished brass nickel plated spring hinges)

The urinal stalls will have ϕ 1-1/2" slate treads of size shown on drawings with slate partitions and ends, etc.

Urinal stalls to have 6" cap at top and to have slate back, same to be set out from wall to allow space for plumbing work behind.

The top of urinal stalls to have nickel plated brass rail extending around same and fasted to the walls with nickel plated brass flanges.

Material and workmanship.

All materials must be the best of their respective kinds as above specified. All work must be first class in every respect and none but skilled workmen will be allowed on the job.

In case any of the material is not up to the specifications, the Architect will reject the same, and any materials so rejected by him must be immediately removed from the premises. If the Architect

shall consider a workman unskilled or detrimental to the work, he may, at his discretion order him off the job, and in such case the Contractor must provide a suitable man in his place.

Rubbish

All dirt and rubbish caused or made by workmen on the plumbing must be removed from the premises.

Finally

The specifications are intended to furnish a complete job of plumbing and in case there is anything necessary to make it so, and not mentioned herein, the plumbing contractor will furnish same without additional charges.

Down Spout Connections

The plumbing contractor will furnish and put in the down spout connection to the sewer. Down spouts to be _____ extra heavy cast iron soil pipe, and to extend from six feet above grade line on outside of building to the sewer main under building.

There will be eight of these lines of down spout connections. All joints in sewer to be made with molten lead and oakum. Down spout connections to be firmly held in place with heavy rests or hinges.

ELECTRIC WIRINGS.

Conduit System.

General.

Contractor or contractors for this work is or are required to

carefully read the entire technical specifications hereto attached, together with the specifications for this work before making out his or their bids and before entering into contract, for he or they will be held rigidly to the interpretation of the same by the Architect.

There is to be constructed a perfect conduit system, to consist of enameled iron conduits, such as electroduct or its equal.

No conduit must be used that has an inside diameter of less than $5/8$ ".

Conduits for the mains shall start at the rear of the building in basement from an iron box to contain a main switch and cutout, and shall from there lead to three cabinets placed in corridors of each floor.

All cabinets must be set with face flush with the finish plaster.

This conduit must on each floor enter an iron box, with a lining of $1/4$ " of slate with glass panel door, boxes to be of sufficient size to accommodate the tablet boards for which they are intended.

From each of these tablets conduits shall be run continuous from tablet box to switches and outlets as marked on plans.

The entire conduit system must be constructed and completed without any wiring introduced before any plastering shall be done.

All joints in this conduit systems must be made in a water proof manner.

No more than four 90° elbows will be permitted in any one run, and all elbows must be what is known as "Long sweep elbows".

All conduits must be carefully cut with back saw (not pipe cutters) and all burrs must be carefully removed after carefully cutting and threading each end.

The conduit throughout must be entirely covered with enamel both outside and inside and must be free from burrs and fins.

Outlet Boxes

Outlet boxes must be installed at all outlets for lights and switches.

All outlet boxes must be of standard types, pressed steel boxes, with covers to fit.

All outlet boxes for outlets must be finished with 3/8" fixture stems.

All outlet boxes must be set flush with edge of plastering.

The location of outlets are marked on plans approximately only and the Contractor must carefully space and center all outlets accurately.

Grounding of Conduits

The entire conduit system must be electrically bonded together and the complete system must be permanently and efficiently grounded.

System of Wiring

The building throughout is to be wired for a two-wired multiple system with a difference of potential of _____ volts.

All wire used in installation must be the best grade of rubber covered wire, with extra braid for conduit work.

All wire must be so calculated as to carry the full load with not to exceed 2 per cent drop of voltage from main switch to farthest lamp.

Each 16-candle power lamp is to be figured for current consumption of _____ of an ampere.

No fuses will be permitted outside of the cabinets provided for this purpose and no more than twelve lights shall be permitted on each circuit or to depend on any one fuse.

This system of wiring shall start with _____ approved knife switch with cartridge fuses of sufficient capacity to carry the entire load of the building plus 50%. From there the wiring shall follow the main conduit and connect to three tablet board on the three different floors respectively. From these tablets sub-circuits are to be run to all openings as marked on plans and mentioned above.

No joints of wire will be permitted inside of conduits and joints will only be permitted where unavoidable.

All joints must be properly made mechanically, well soldered, insulated with rubber and adhesive tape, and painted with two coats of moisture repellant. This Contractor will be required to make connections between the wiring system and fixtures.

Tablet Boards

For each of the tablet boxes there is to be furnished one white Italian marble standard tablet board similar and equal Grouse-Hands. These boards must be of sufficient size to amply accommodate the mountings thereon.

Each circuit shall be provided with a double pole knife switch in addition to the double pole fuse.

All fuses in these boards must be of the Cartridge type for _____ volts.

All mountings on the fuse of these tablet boards shall be highly finished, polished and lacquered, and all dimensions of switch-

es and fuses must conform to the 1904 requirements of the "National Electrical Code".

Switches

In addition to the main switches mentioned above, this Contractor will furnish and place switches for all outlets with locations as indicated by the Architect.

All switches must be mounted in standard boxes for this purpose and must be the Heart push flush switch or its equal.

Contract and Workmen

The Contract for the work covered by these specifications will not be let to any person or party who is not a regular contractor, permanently engaged in and thoroughly competent for such work.

All workmen engaged on this installation must be thoroughly competent from the duties which they are to perform. If, in the estimation of the Architect, the men employed are incompetent he shall have the right to have such men cease their work on the building and such men shall not be employed on similar work in this building.

Drilling and Cutting

This contractor must not do any cutting or drilling in any place which will weaken the construction of the building or any part thereof. He must repair all damages done by him from the installation of any of this work, and leave the building in as good a condition as it was when he started.

Debris

Contractor must remove from this building all debris incurred or accumulated by the work covered by these specifications.

Acceptance

When this contract is thoroughly completed in strict accordance with the above specifications and plans, this contractor must in the presence of the Architect or his representative perform sufficient test to show that the entire system is in first class operating condition and finished throughout in strict accordance with the 1904 rules of the "National Electrical Code". He must prove that all circuits are continuous, free from contact, and free from grounds. Should the contractor fail to prove such conditions on the plant during the test, he must remedy all defects at his own expense, and after such defects have been remedied he must again perform a sufficient test to show the plant to be in the condition as called for above.

After a satisfactory test of this kind has been made, the Architect will issue an acceptance in writing for the whole installation which will entitle the contractor to payment in full for the contract price, but no payment will be made for any part of this work until contract is finally and entirely completed.

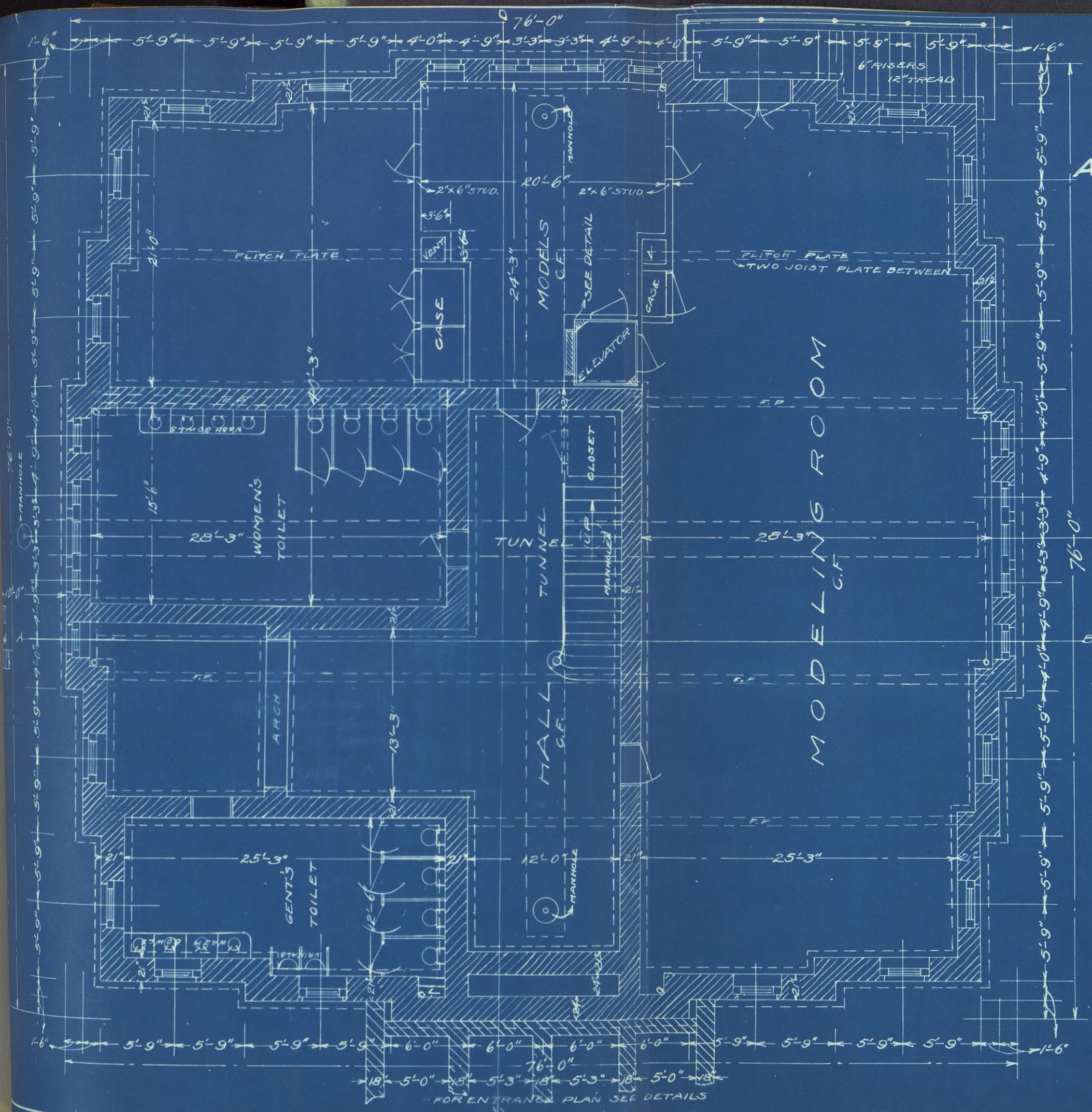
THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

NOTES:

- 1, ALL STONE WALLS ARE 21" THICK.
- 2, FOR PLAN & DIMENSIONS OF FRONT STEPS SEE PLATE NO 12.
- 3, SEE PLATE NO 16 FOR ELEVATOR DETAILS.
- 4, ALL STONE WALLS ARE FURRED.
- 5, WINDOWS & DOORS ARE DRAWN CONVENTIONALLY, SEE PLATE NO 13 FOR DIMENSIONS.
- 6, SEE PLATE NO 14 FOR STAIR CASING & DETAILS.
- 7, FOOTINGS ARE 6" WIDER ON EACH SIDE, THAN WALLS
- 8, ALL FLOORS ARE CEMENT WITH FALL TOWARDS DRAINS.
- 9, SEE PLATE NO 15 FOR TUNNEL DETAILS.
- 10, ALL FLOORS HAVE FLITCH PLATE SAME AS ON THIS PLAN SIZE $\frac{1}{2}$ " X 14" STAGGER BOLTS 12" C.T.O.C.

BASEMENT PLAN
SCALE: $\frac{1}{8}$ INCH = 1 FOOT.

Wm. Wilkinson
ARCHT. STUDENT 1905 CLASS.

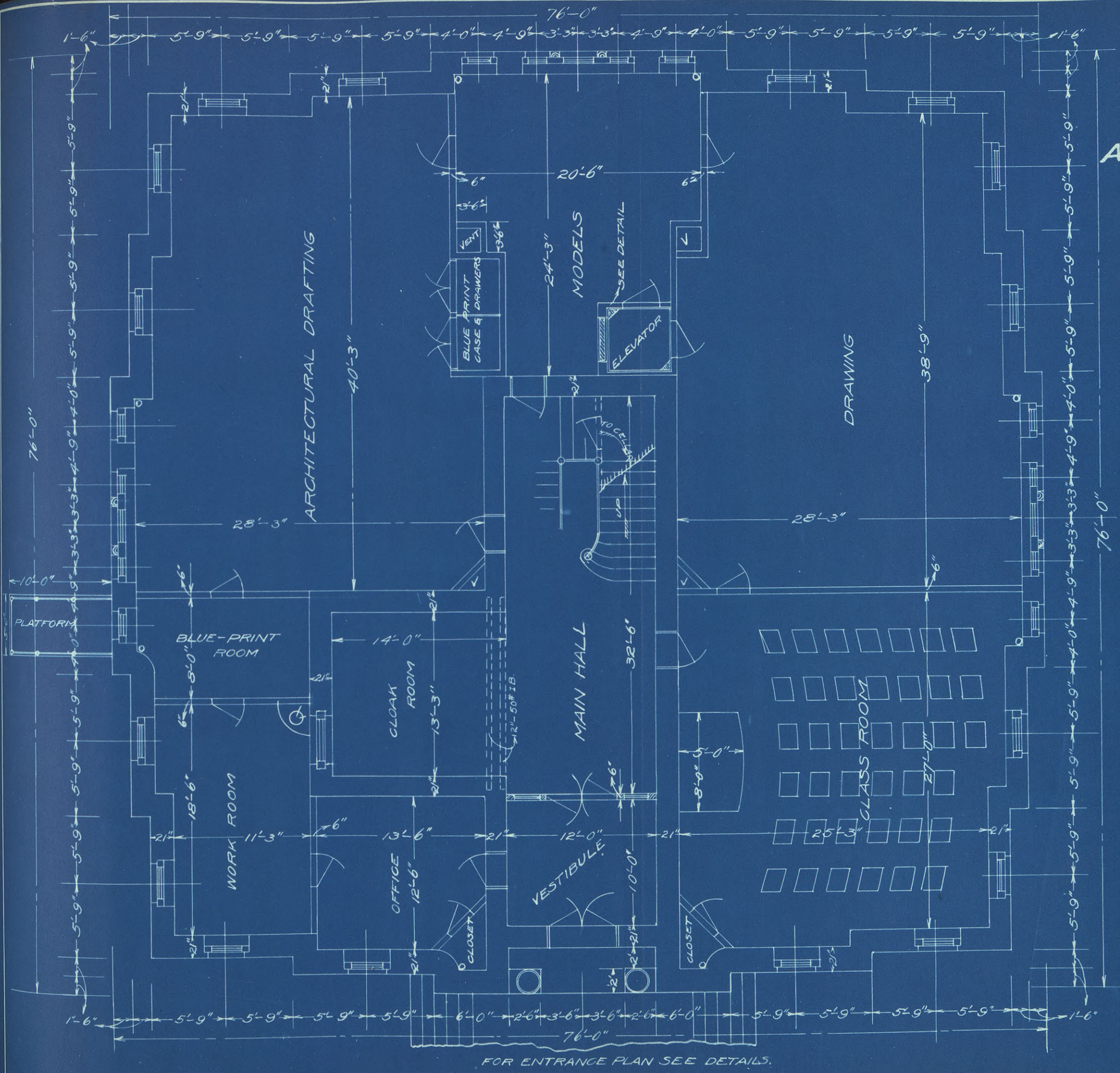


THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

- NOTES:
- 1, ALL STONE WALLS ARE 21" THICK.
 - 2, FOR PLAN & DIMENSIONS OF FRONT STEPS SEE PLATE NO 12.
 - 3, SEE PLATE NO 16 FOR ELEVATOR DETAILS.
 - 4, ALL STONE WALLS ARE FURRED.
 - 5, WINDOWS & DOORS ARE DRAWN CONVENTIONALLY, SEE PLATE NO 13 FOR DIMENSIONS.
 - 6, SEE PLATE NO 14 FOR STAIR CASING & DETAILS.

FIRST FLOOR PLAN
SCALE: 1/8" INCH = 1 FOOT.

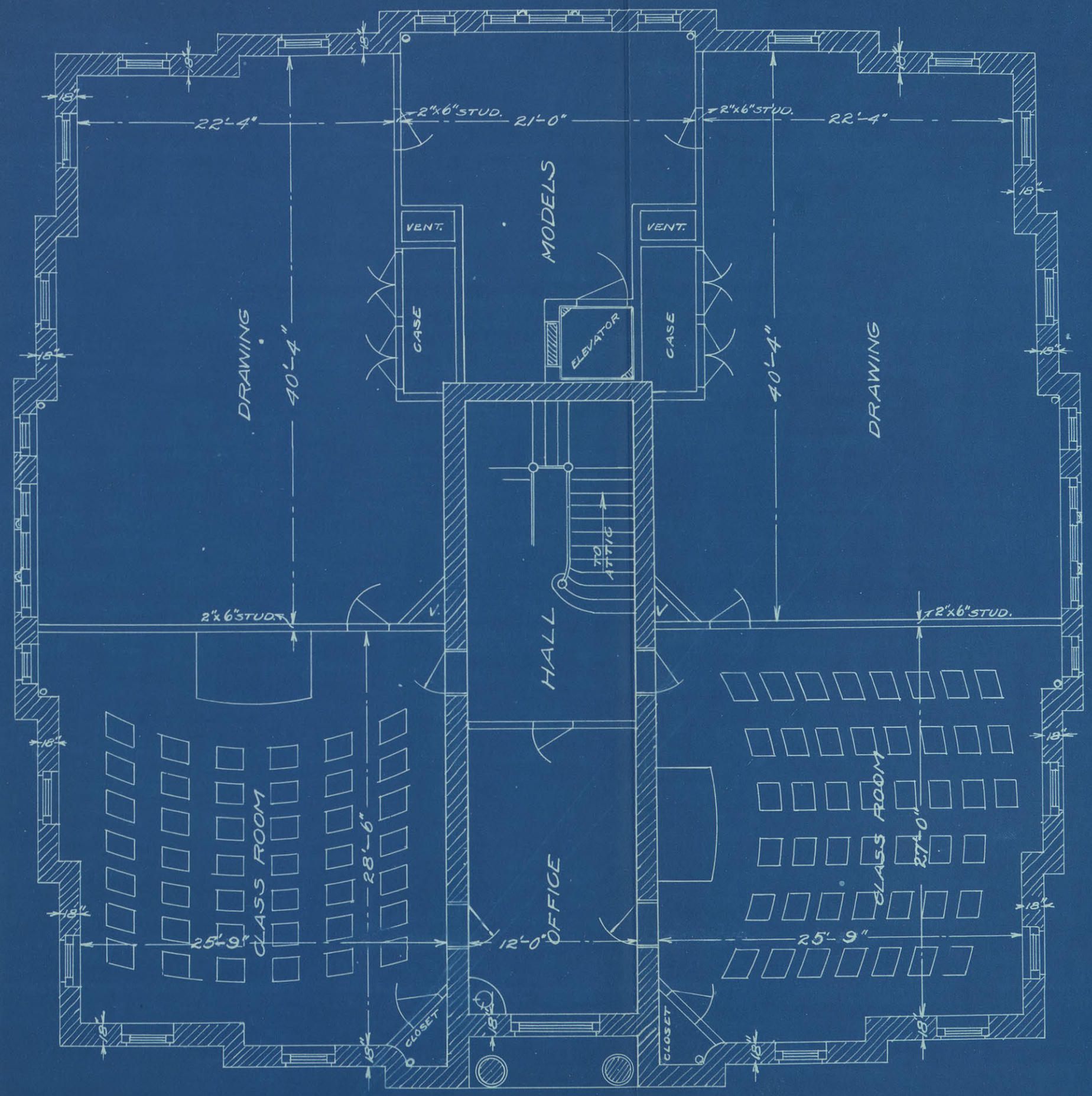
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ARCHT. STUDENT 1905 CLASS.



FOR ENTRANCE PLAN SEE DETAILS.

THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

- NOTES:
1. ALL PARTITIONS HAVE 2"x6" STUDDING, 16" C. TO C.
 2. ALL STONE WALLS ARE 18" & FURRED.
 3. WINDOWS & DOORS ARE DRAWN CONVENTIONALLY, FOR DETAIL SEE PLATE NO 13.
 4. SEE PLATE NO 14 FOR STAIR CASING.
 5. SEE PLATE NO 16 FOR ELEVATOR.
 6. ALL DOORS FROM HALL HAVE TRANSOMS.



SECOND FLOOR PLAN
SCALE: $\frac{1}{8}$ INCH = 1 FOOT.

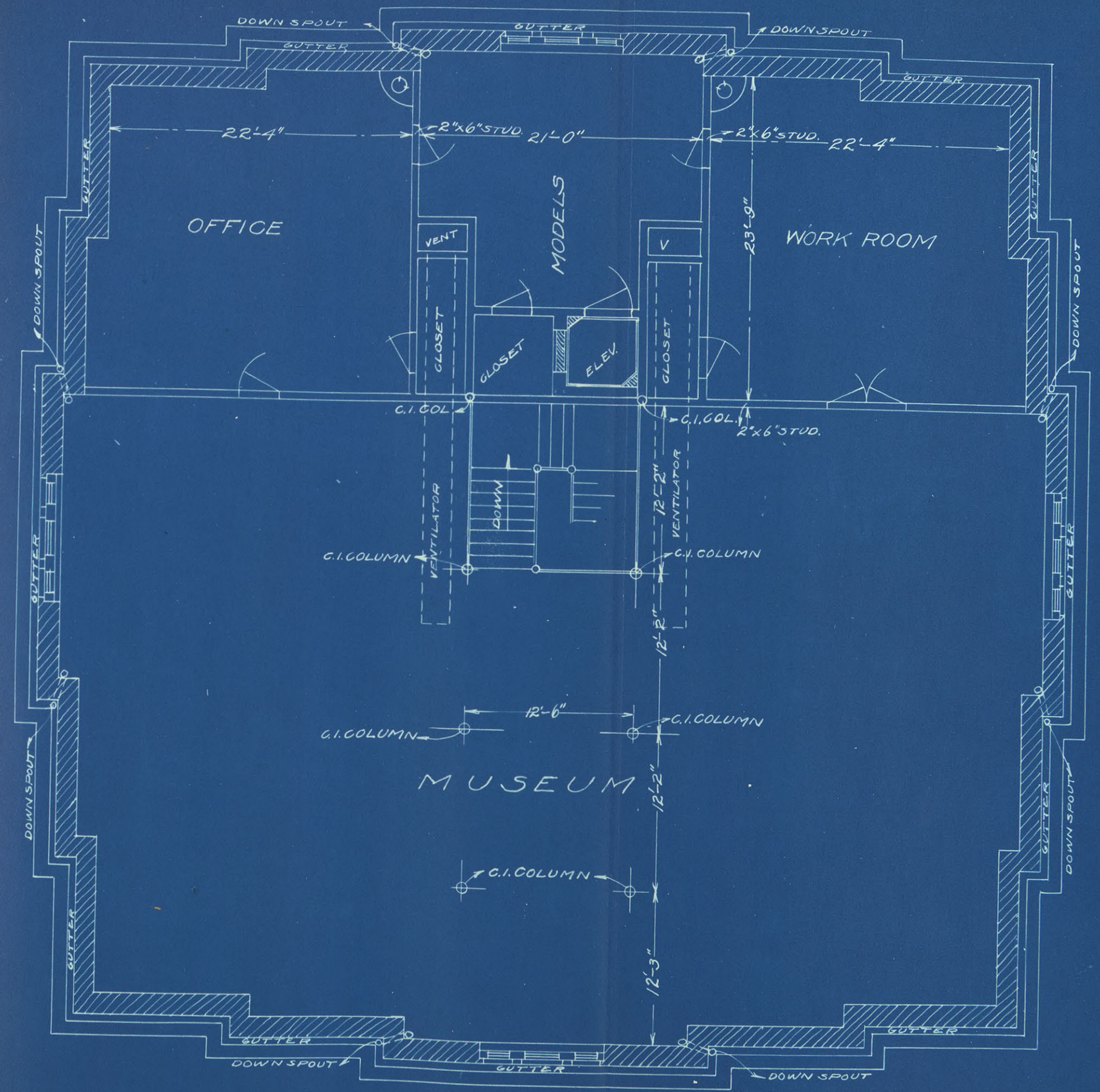
W. J. Wilkinson
ARCHT. STUDENT 1905 CLASS.

THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

- NOTES:
- 1, ALL PARTITIONS HAVE 2"x6" STUDDING, 16" CENTRES.
 - 2, ALL STONE WALLS ARE 18" & FURRED.
 - 3, WINDOWS & DOORS ARE DRAWN CONVENTIONAL, FOR DETAIL SEE PLATE NO 13.
 - 4, SEE PLATE NO 14 FOR STAIR CASING.
 - 5, SEE PLATE NO 16 FOR ELEVATOR.
 - 6, THE C.I. COLUMNS ARE TO BE OF DIFFERENT DESIGNS FOR GLASS ILLUSTRATION.

THIRD FLOOR PLAN
SCALE 1/8" INCH = 1 FOOT.

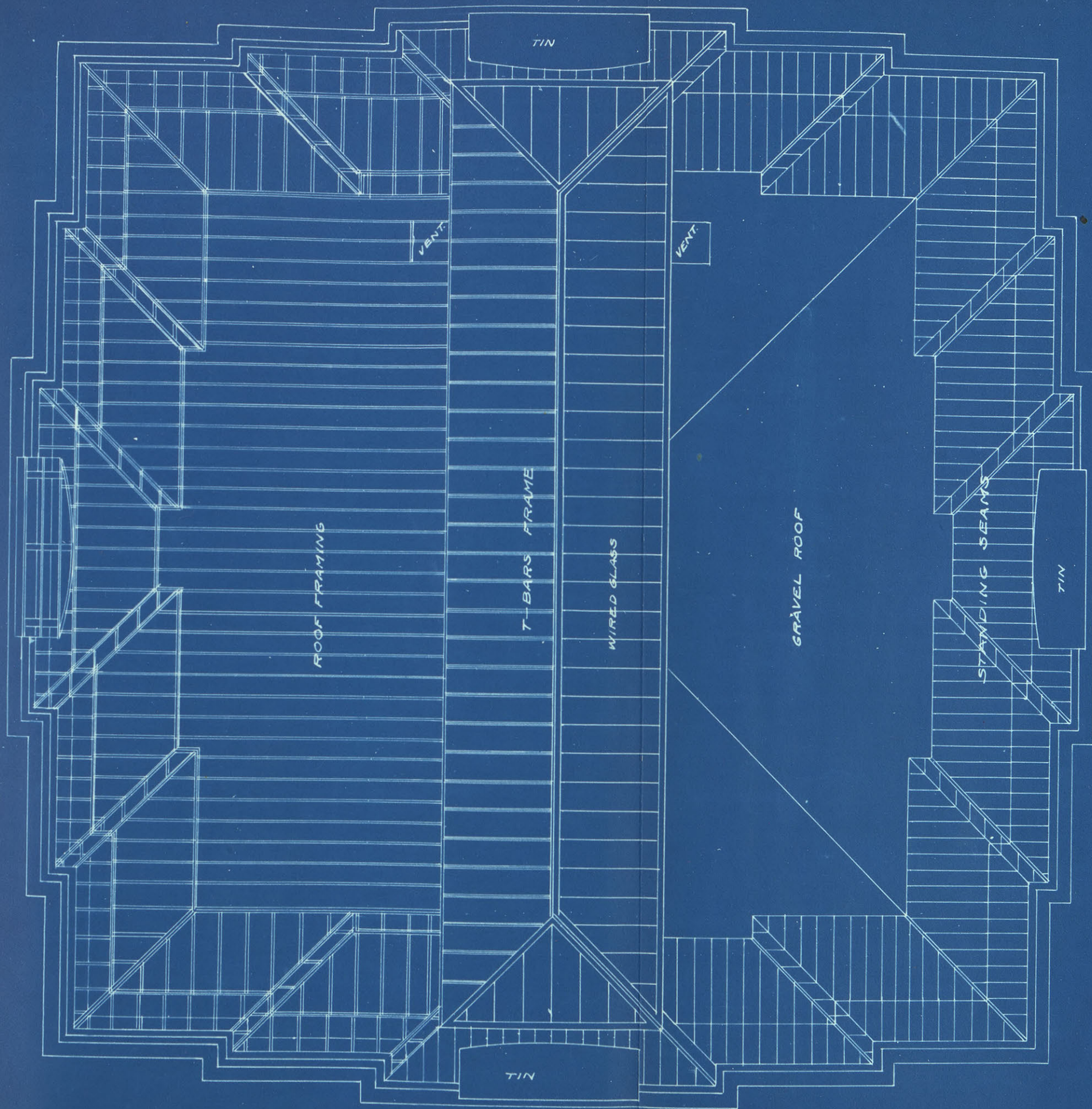
W.J. Wilkinson
ARCHT. STUDENT 1905 CLASS.



THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

NOTES:

- 1, SEE PLATE NO 17 FOR ROOF TRUSS.
- 2, THE T.BARS ARE 2"x2"x $\frac{1}{4}$ "-37.*
- 3, THE TIN IS I.C. OLD STYLE,



ROOF PLAN
SCALE: $\frac{1}{8}$ INCH = 1 FOOT.

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THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

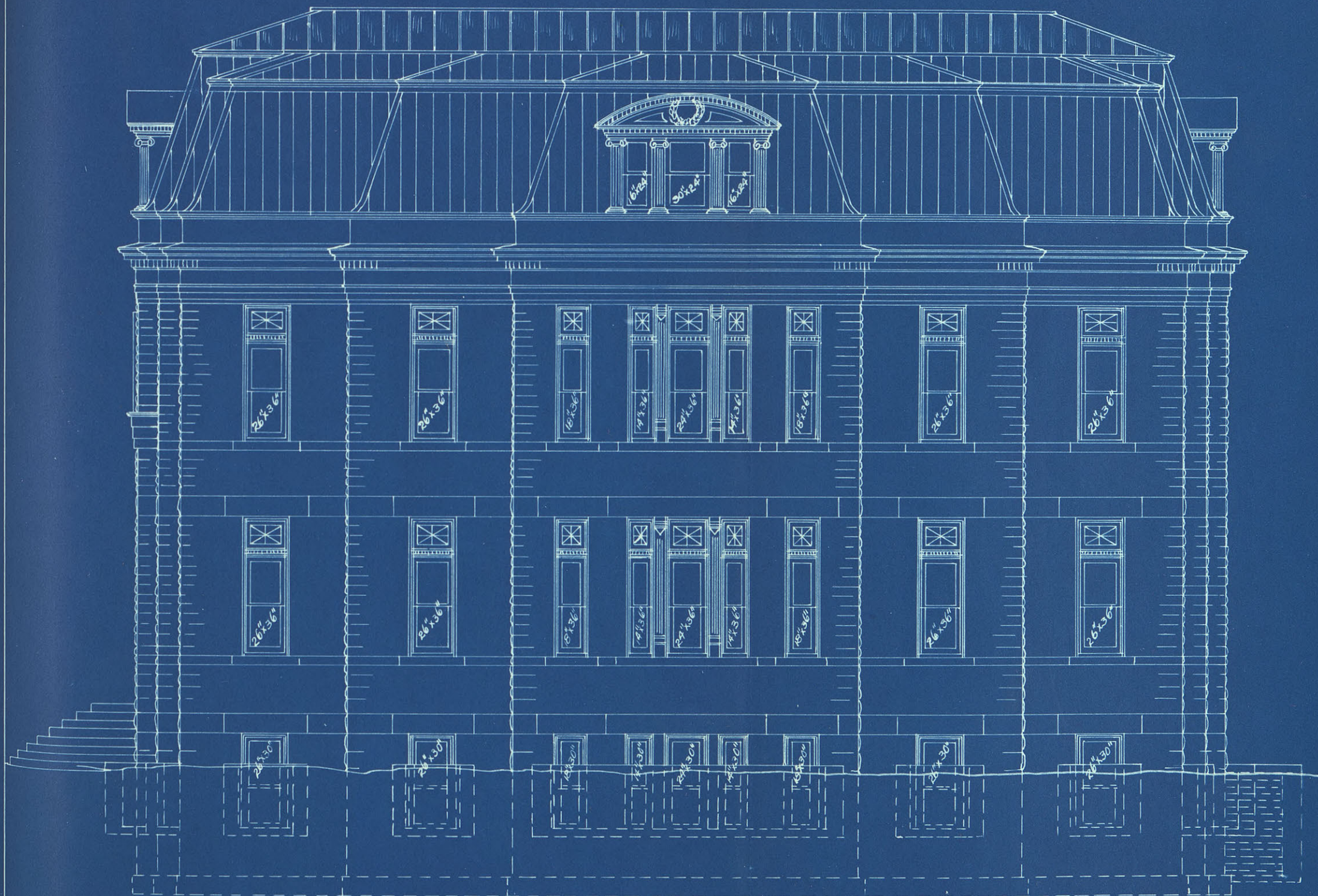


2'-9"
13'-3"
16"
14'-0"
16"
14'-0"
16"
11'-0"
16"

FRONT ELEVATION
SCALE: $\frac{1}{8}$ " INCH = 1 FOOT.

Wm. J. Wilkinson
ARCHT. STUDENT 1905 CLASS.

THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.



RIGHT SIDE ELEVATION
SCALE: $\frac{1}{8}$ " INCH = 1 FOOT.

Wm. J. Wilkinson
ARCHT. STUDENT 1905 CLASS.

THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.



REAR ELEVATION
SCALE: $\frac{1}{8}$ " INCH = 1 FOOT.

Wm. J. Wilkinson
ARCHT. STUDENT 1905 CLASS.

THESIS:
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AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

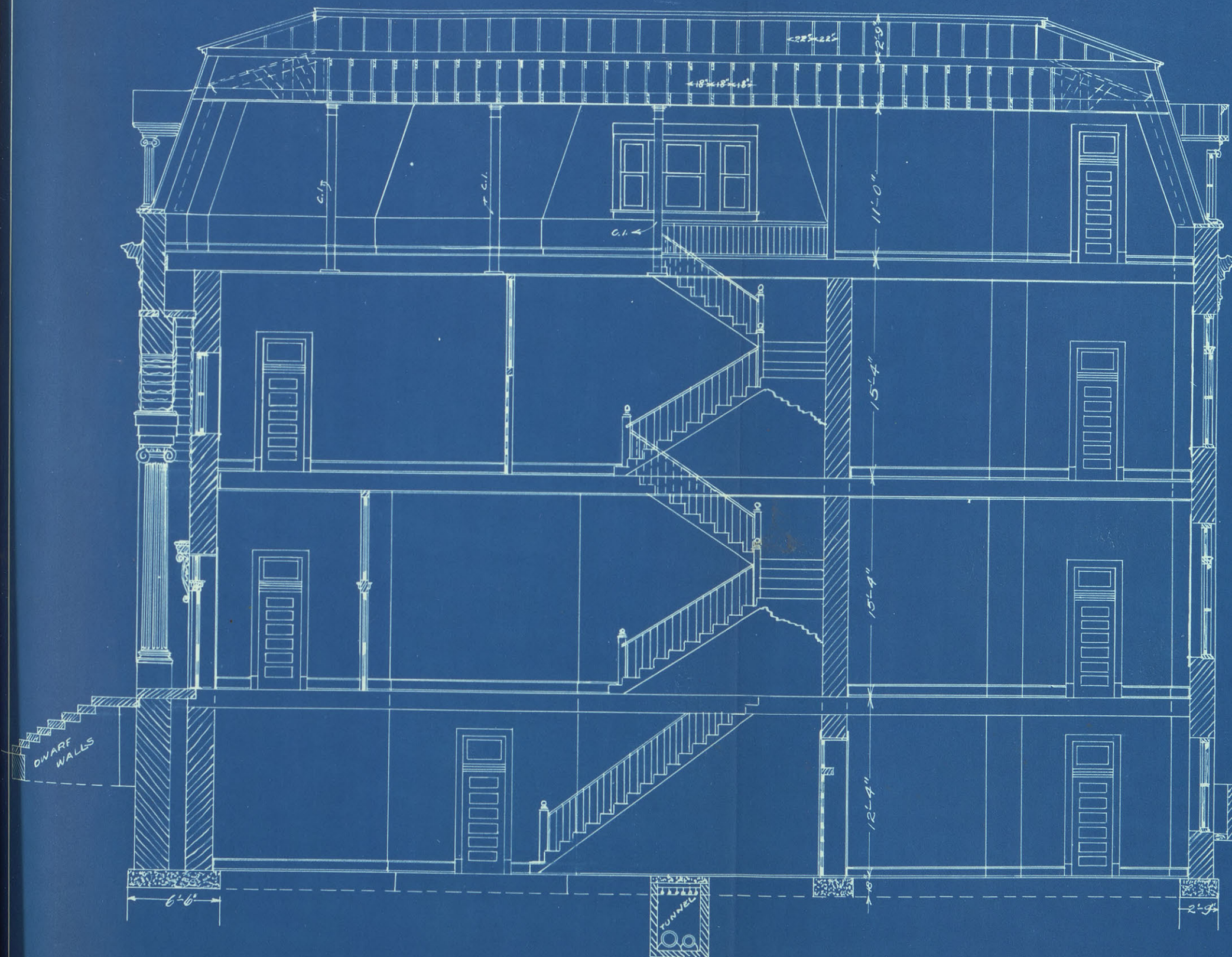


LEFT SIDE ELEVATION
SCALE: $\frac{1}{8}$ INCH = 1 FOOT.

Wm. J. Wilkerson
ARCHT. STUDENT 1905 CLASS.

THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

- NOTES:
1, SEE PLATE N^o 17 FOR ROOF TRUSS.
2, THE C.I. POSTS ARE TO BE OF DIFFERENT DESIGNS TO ILLUSTRATE FOR CLASSES.



LONGITUDINAL SECTION
SCALE: $\frac{1}{8}$ INCH = 1 FOOT.

Wm. Wilkinson
ARCHT. STUDENT 1905 CLASS.

THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

NOTES:

1. SEE PLATE No 17 FOR ROOF TRUSS.
2. THE C.I. POST ARE TO BE OF DIFFERENT DESIGNS TO ILLUSTRATE FOR CLASSES.
3. THE GIRDER OVER CLOAK ROOM IS TO HAVE CAST IRON PLATE 18"X18"X1" UNDER EACH END, AN 4-2 BOLT SEPARATORS EVENLY SPACED.

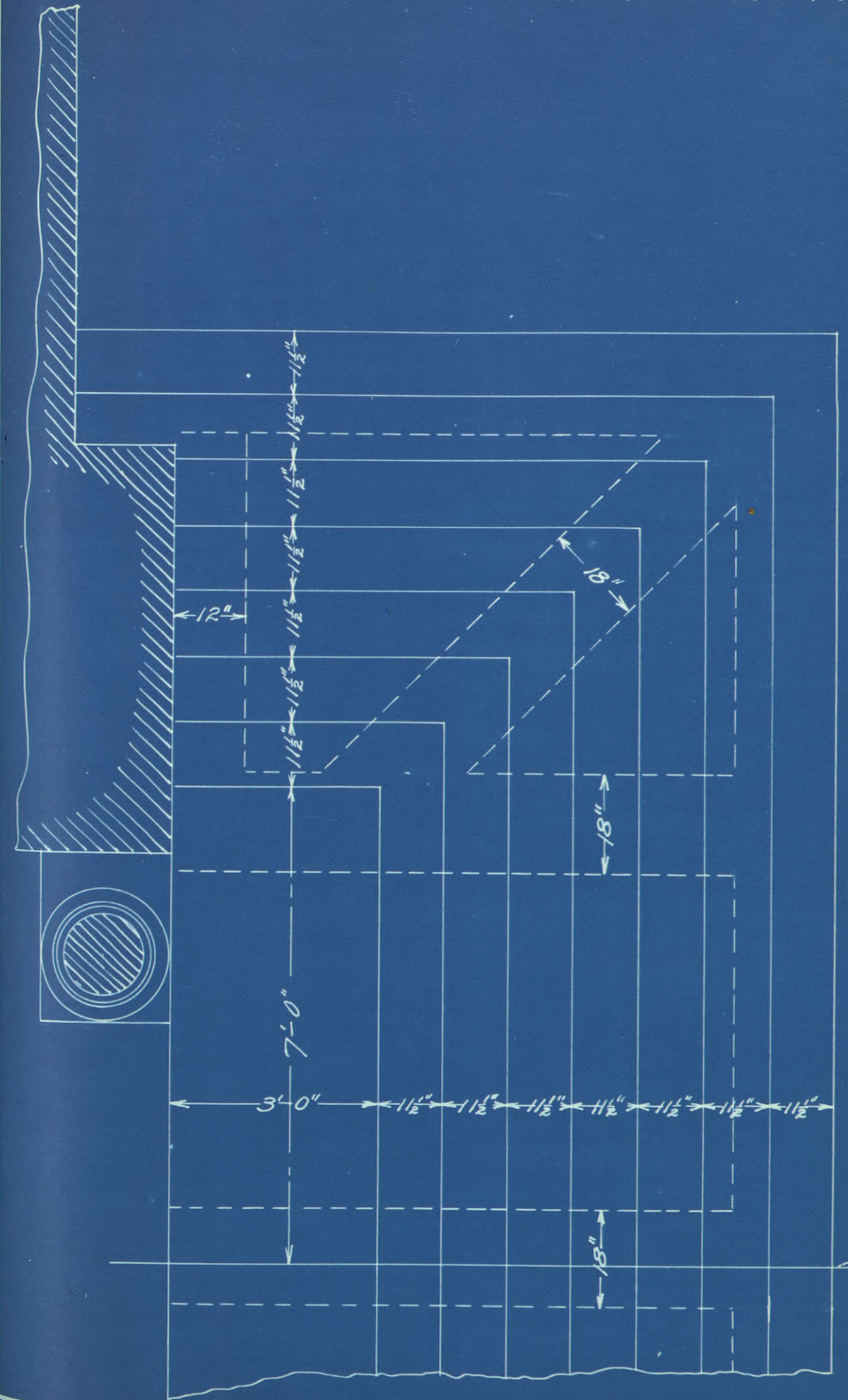
TRANSVERSE SECTION
SCALE: $\frac{1}{8}$ INCH = 1 FOOT.

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ARCHT. STUDENT 1905 CLASS.



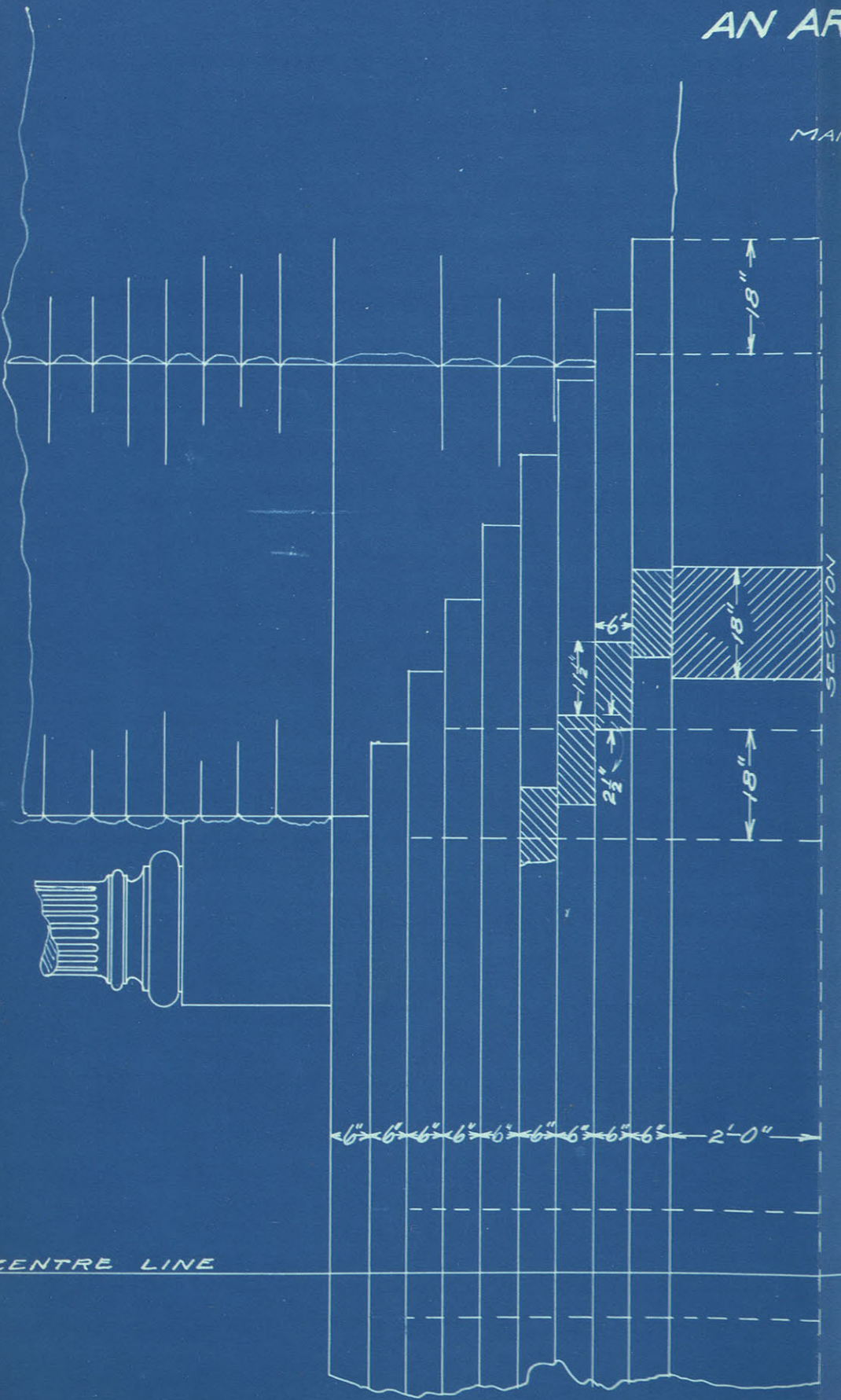
THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

NOTES:
ALL OUTER SURFACES OF STEPS ARE BUSHHAMMERED.



PLAN.

CENTRE LINE

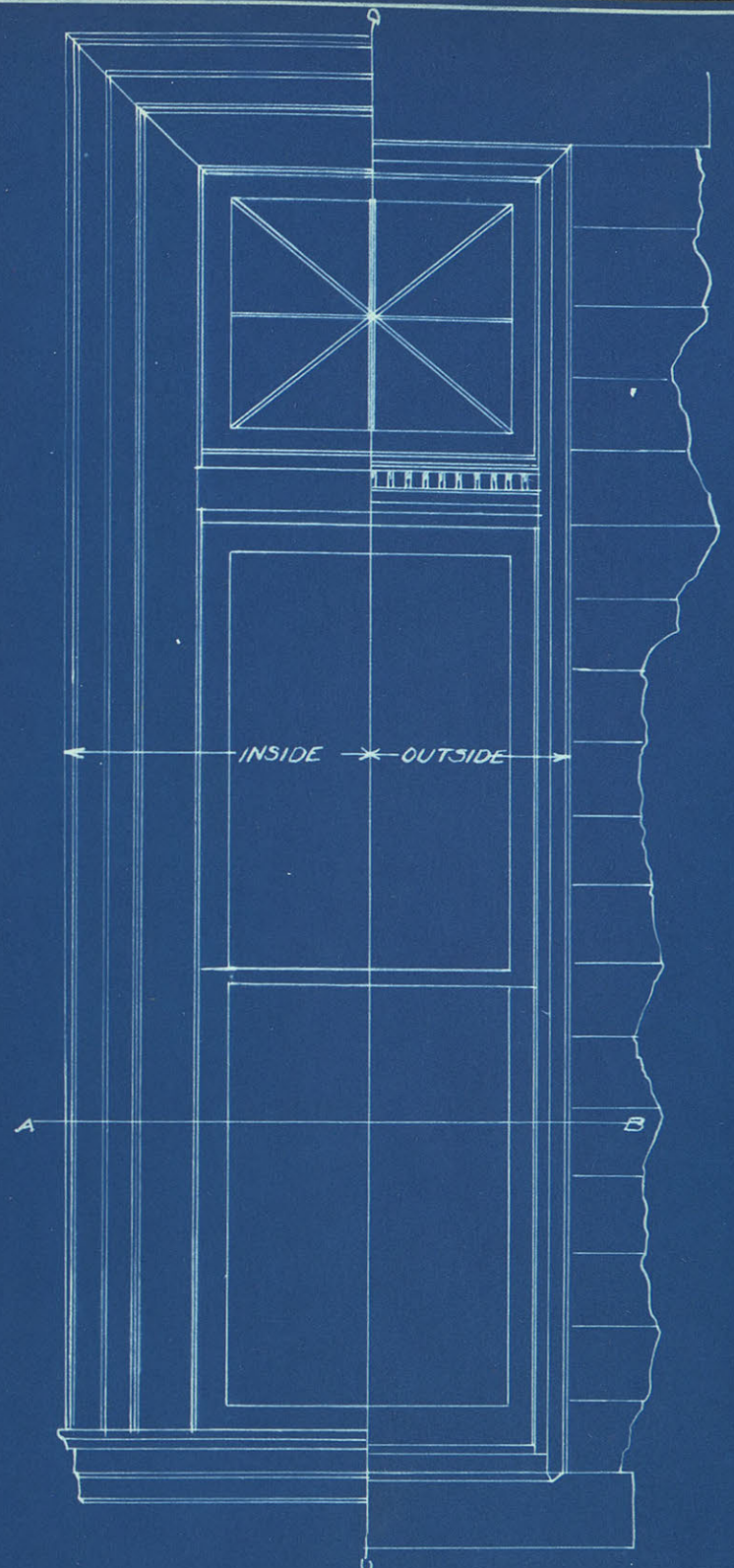
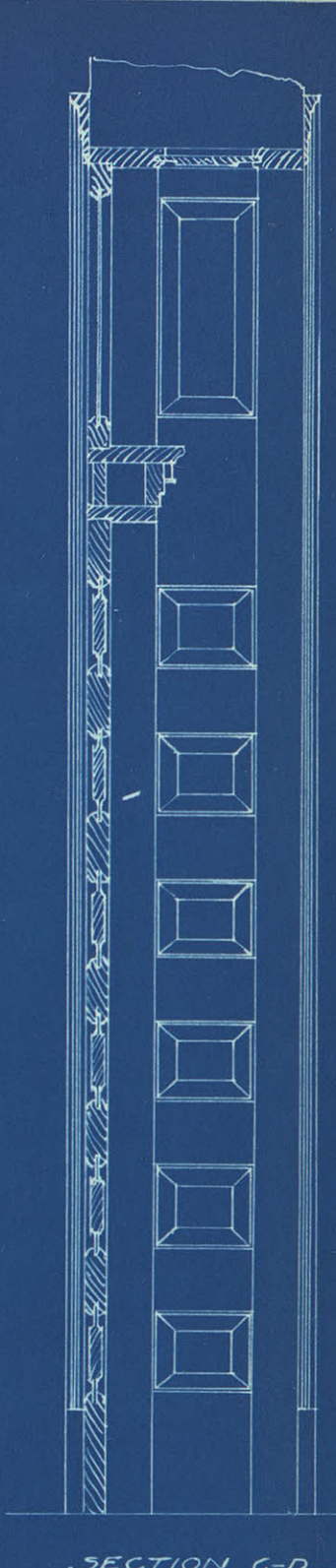
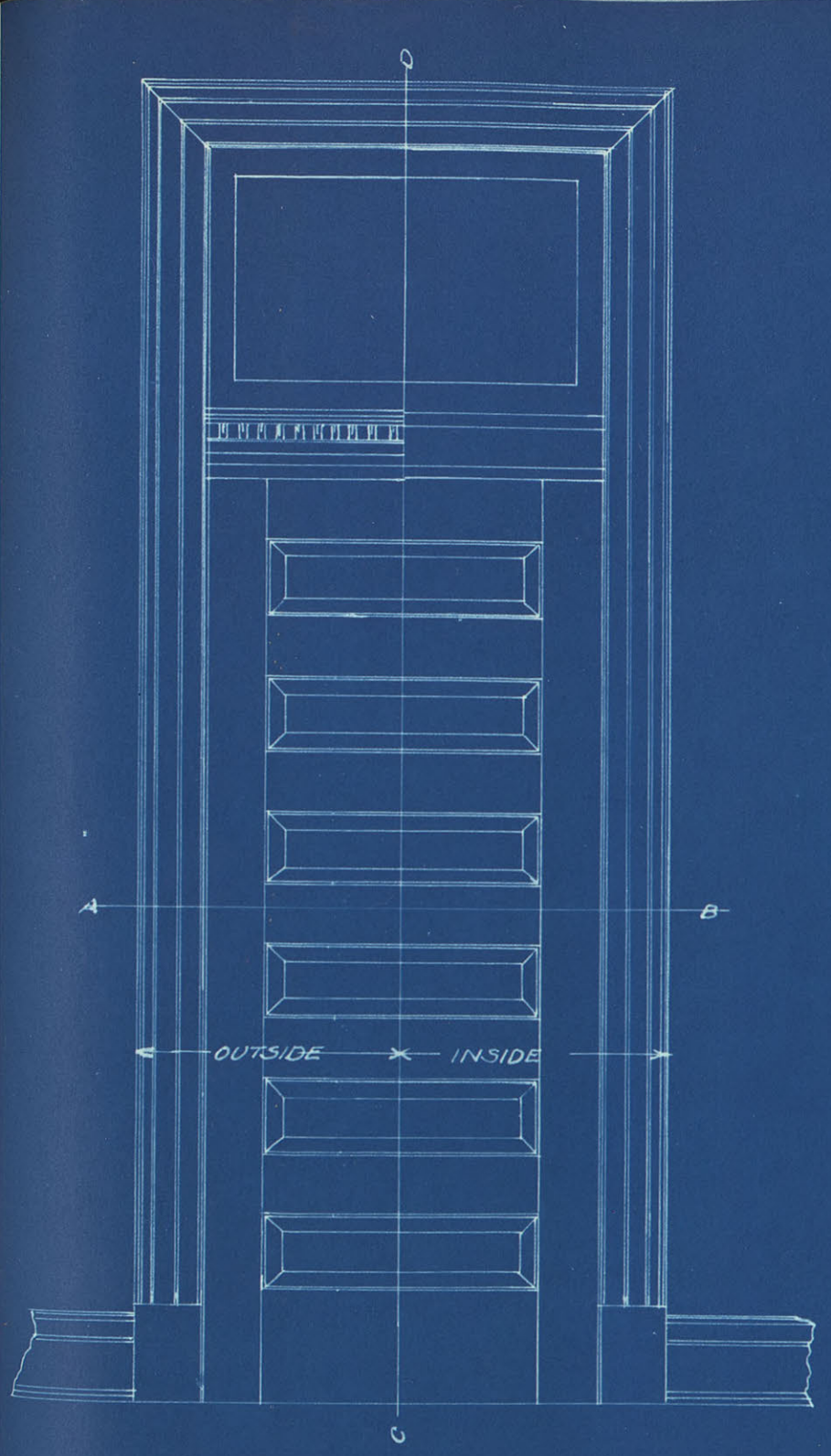


SECTION
ELEVATION.

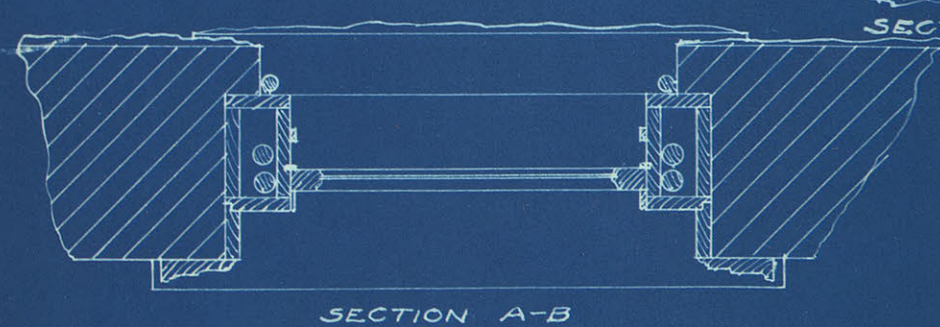
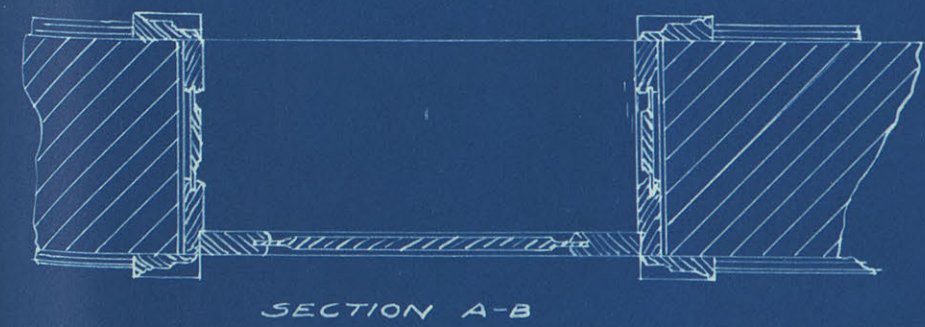
FRONT STEPS DETAIL
SCALE: 1/2" = 1 FOOT.

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ARCHT. STUDENT 1905 CLASS.

THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K. S. A. C.,
MANHATTAN
KANSAS.

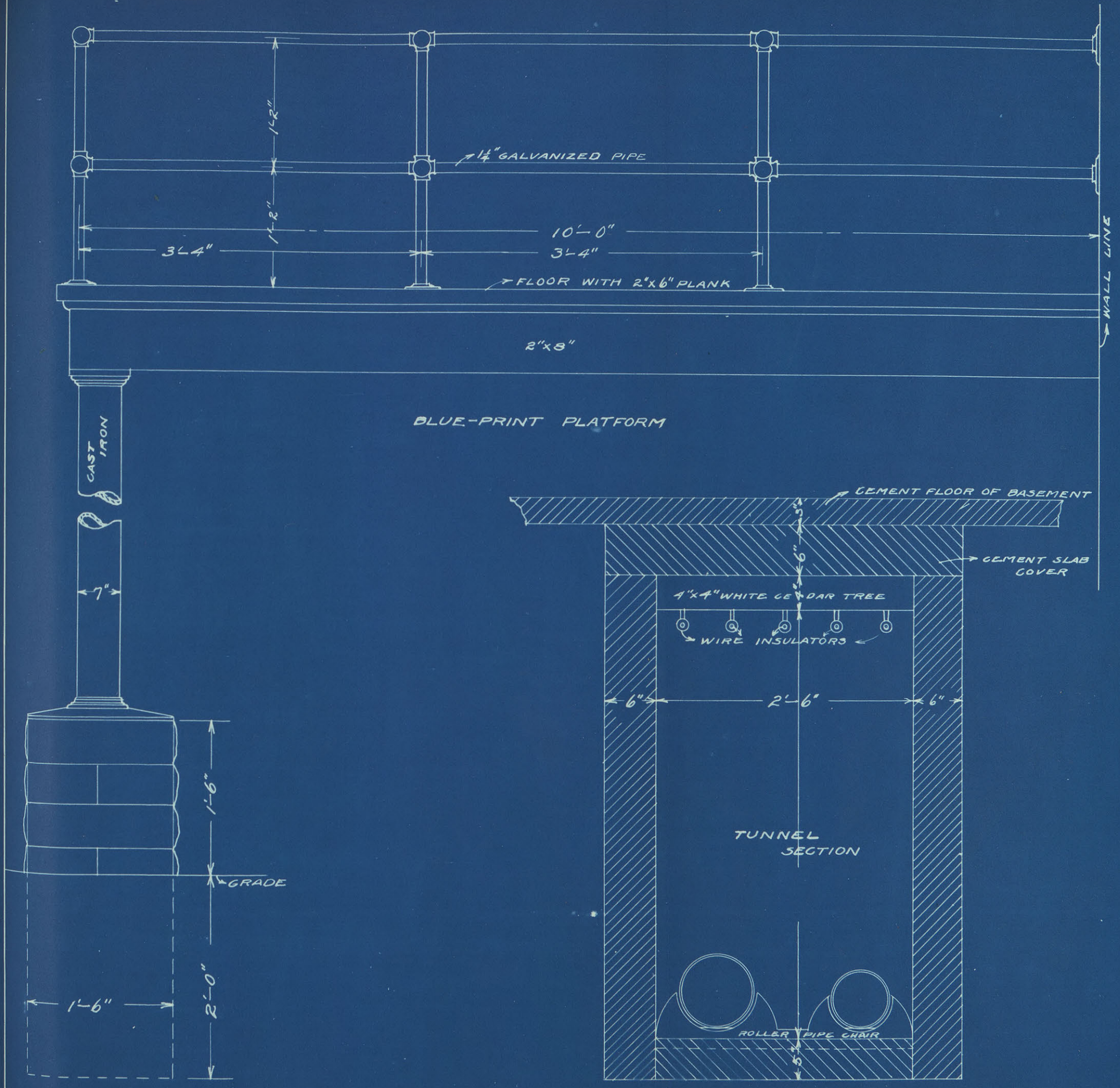


STANDARD DOOR & WINDOW
SCALE: 3/4 INCH = 1 FOOT



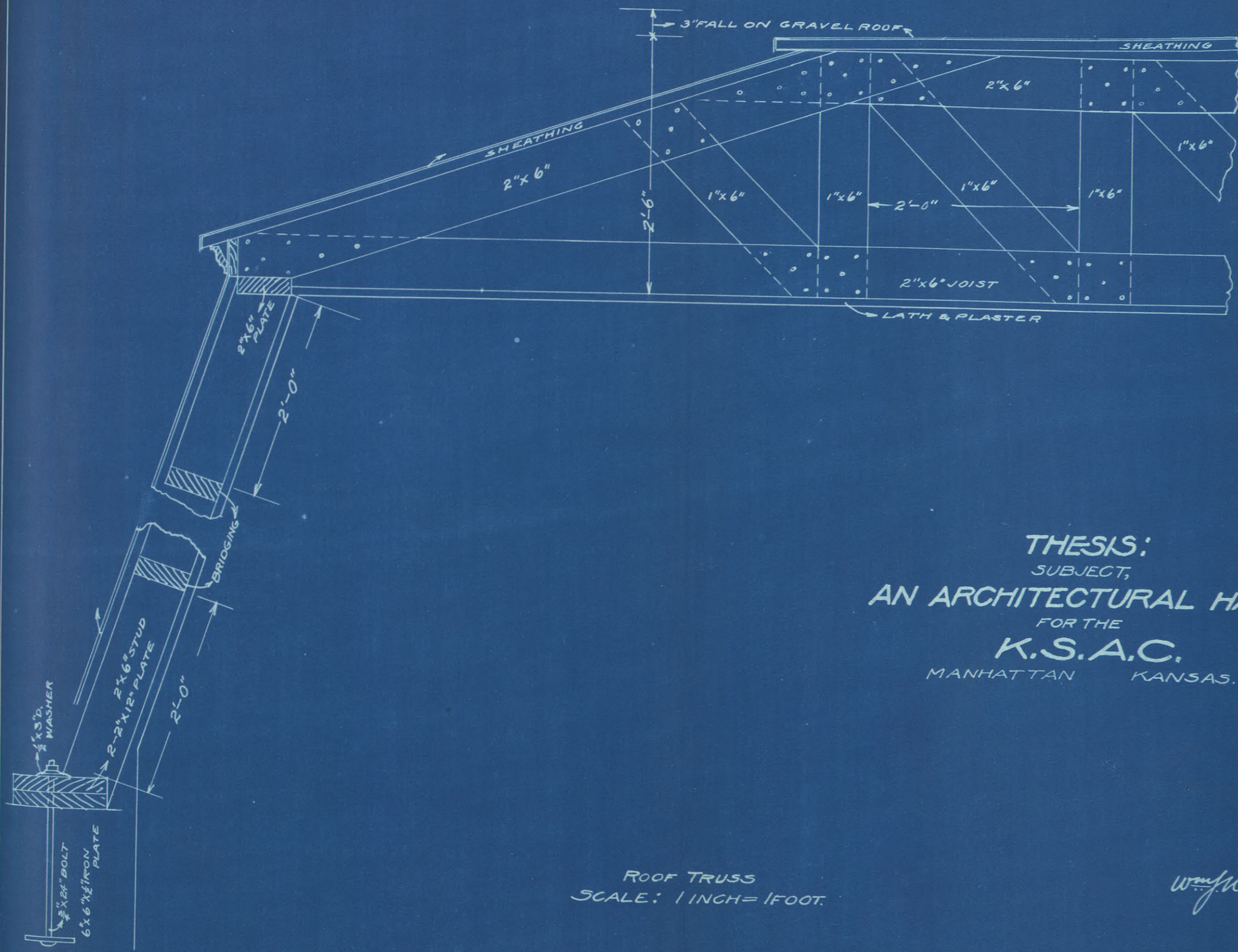
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THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.



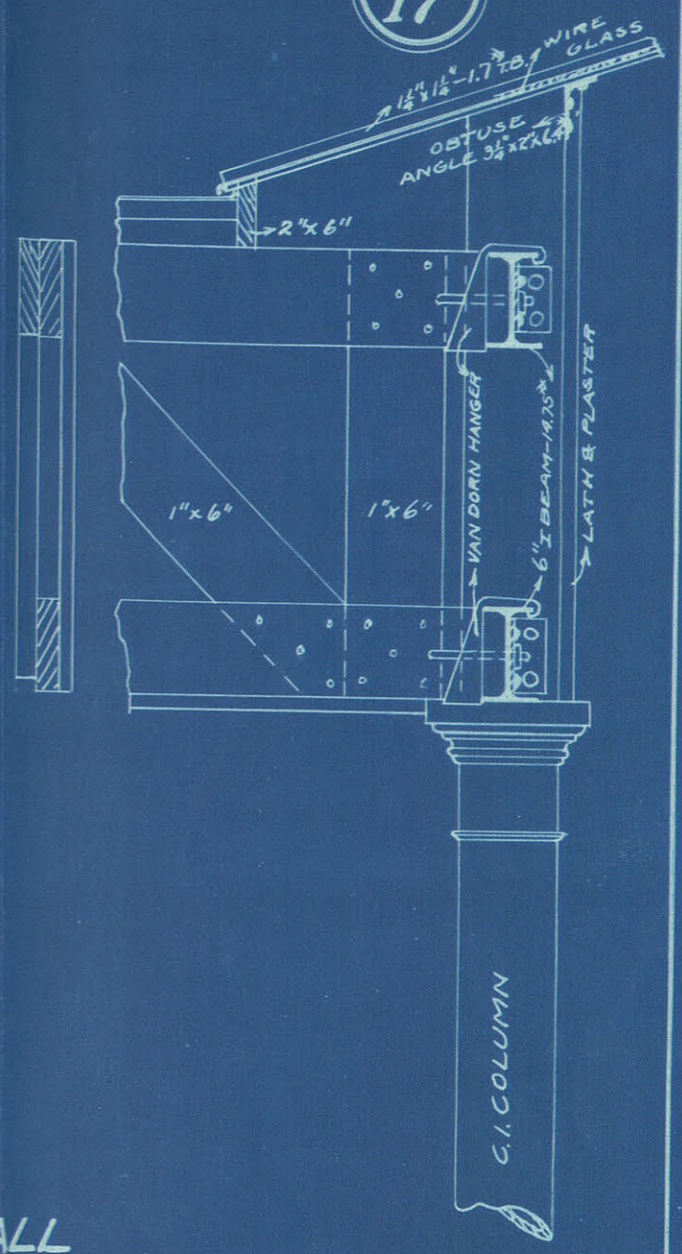
DETAILS.
SCALE: 1/4" = 1 FOOT.

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ROOF TRUSS
SCALE: 1 INCH = 1 FOOT.

PLATE
17

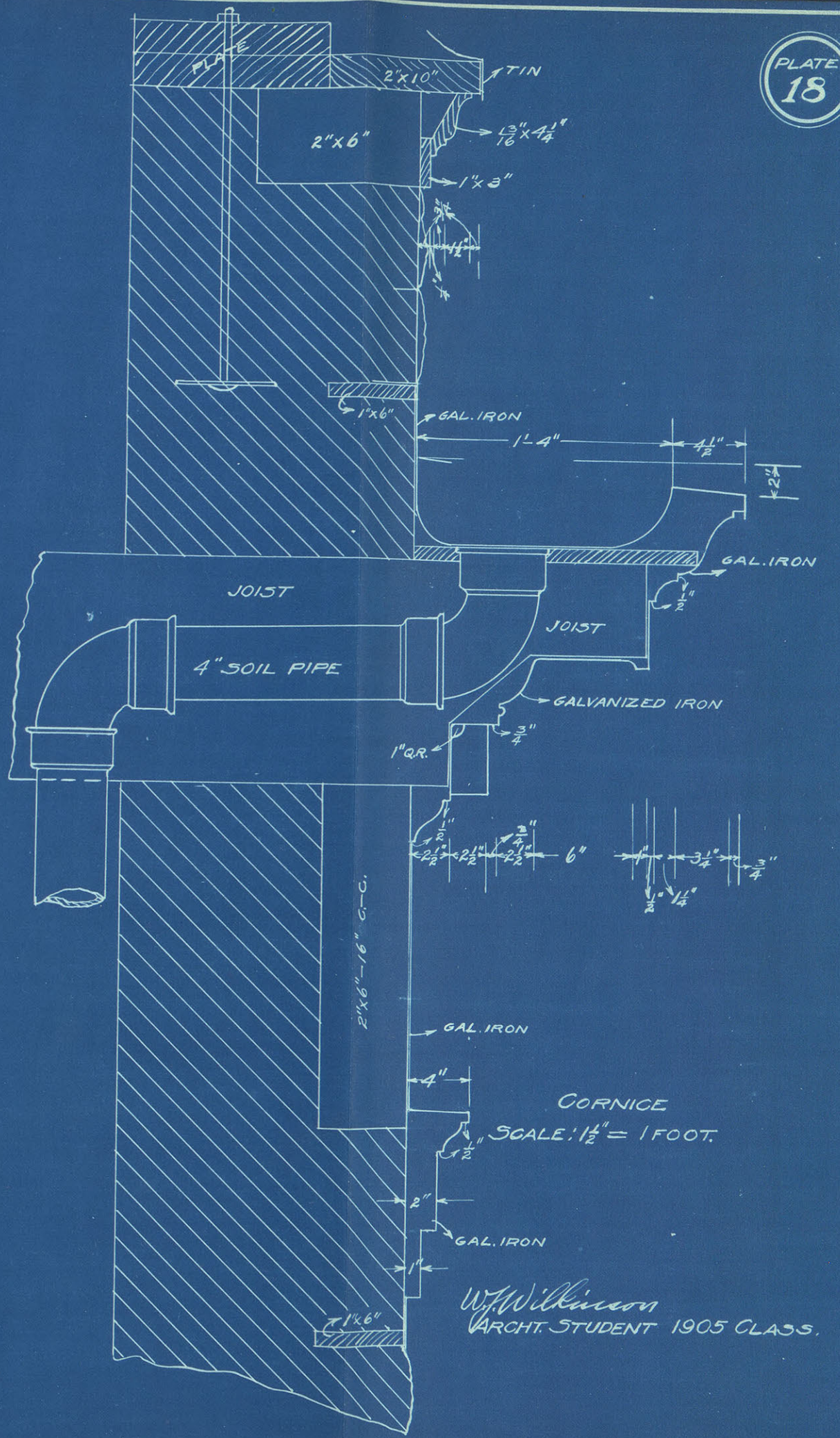


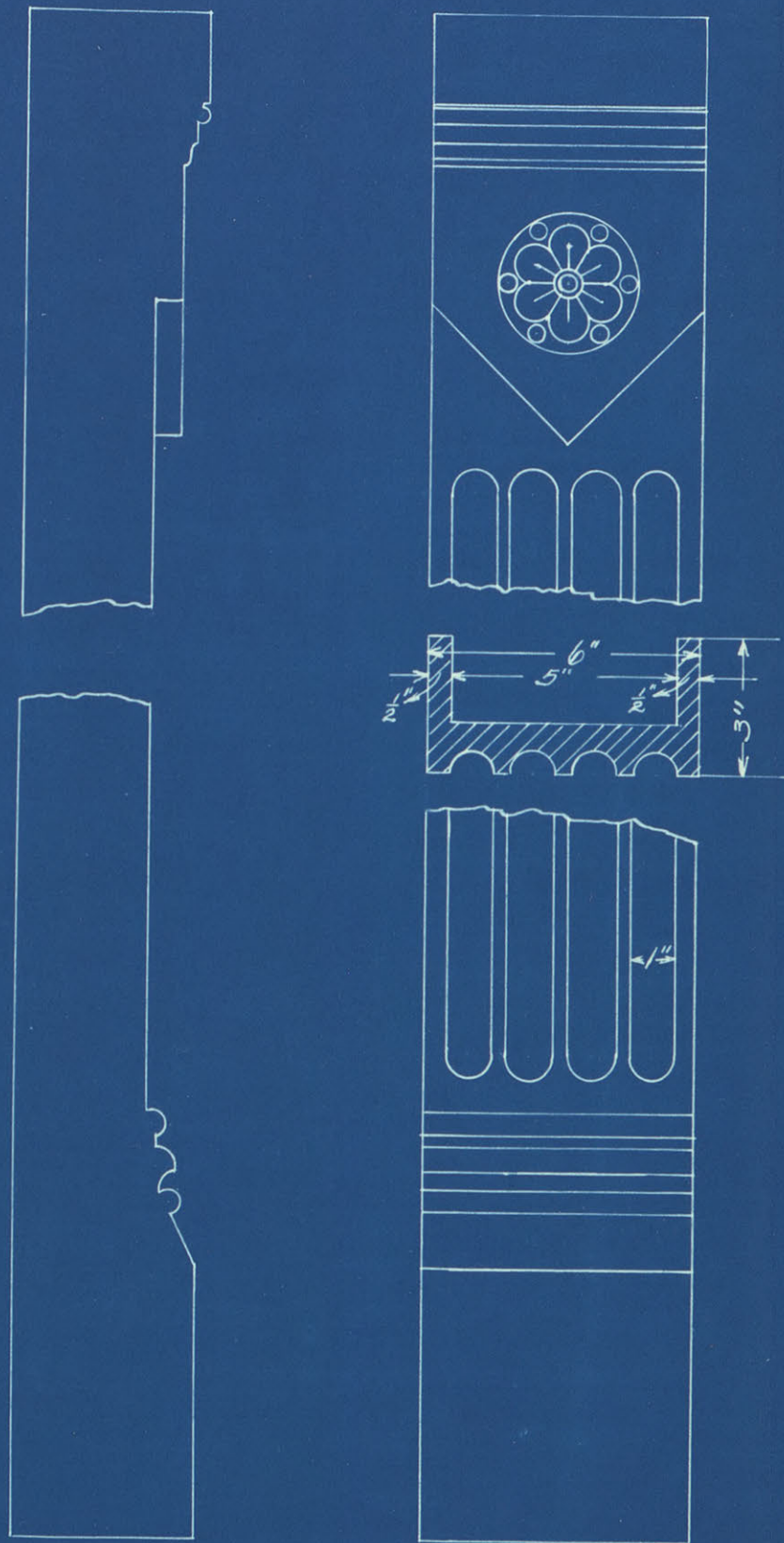
THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
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K.S.A.C.
MANHATTAN KANSAS.

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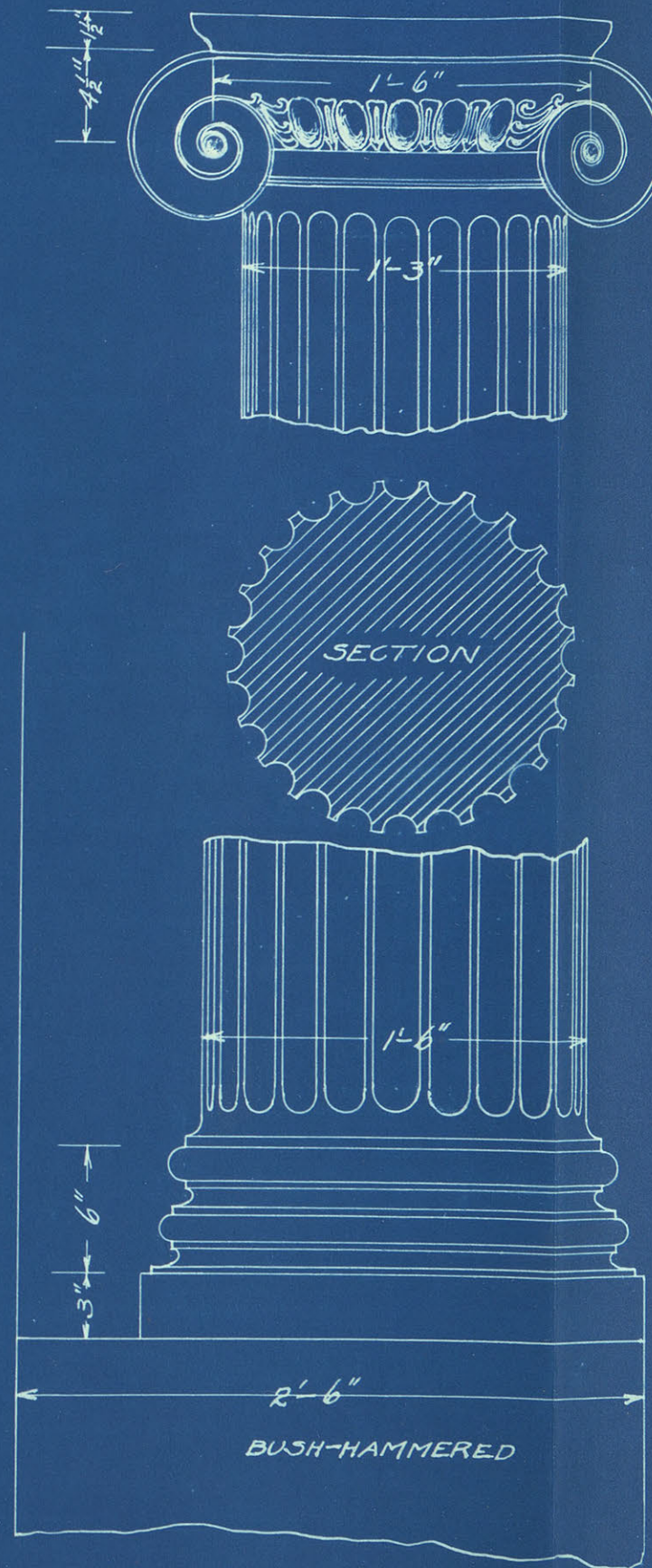


THESIS:
 SUBJECT,
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 K.S.A.C.
 MANHATTAN KANSAS.





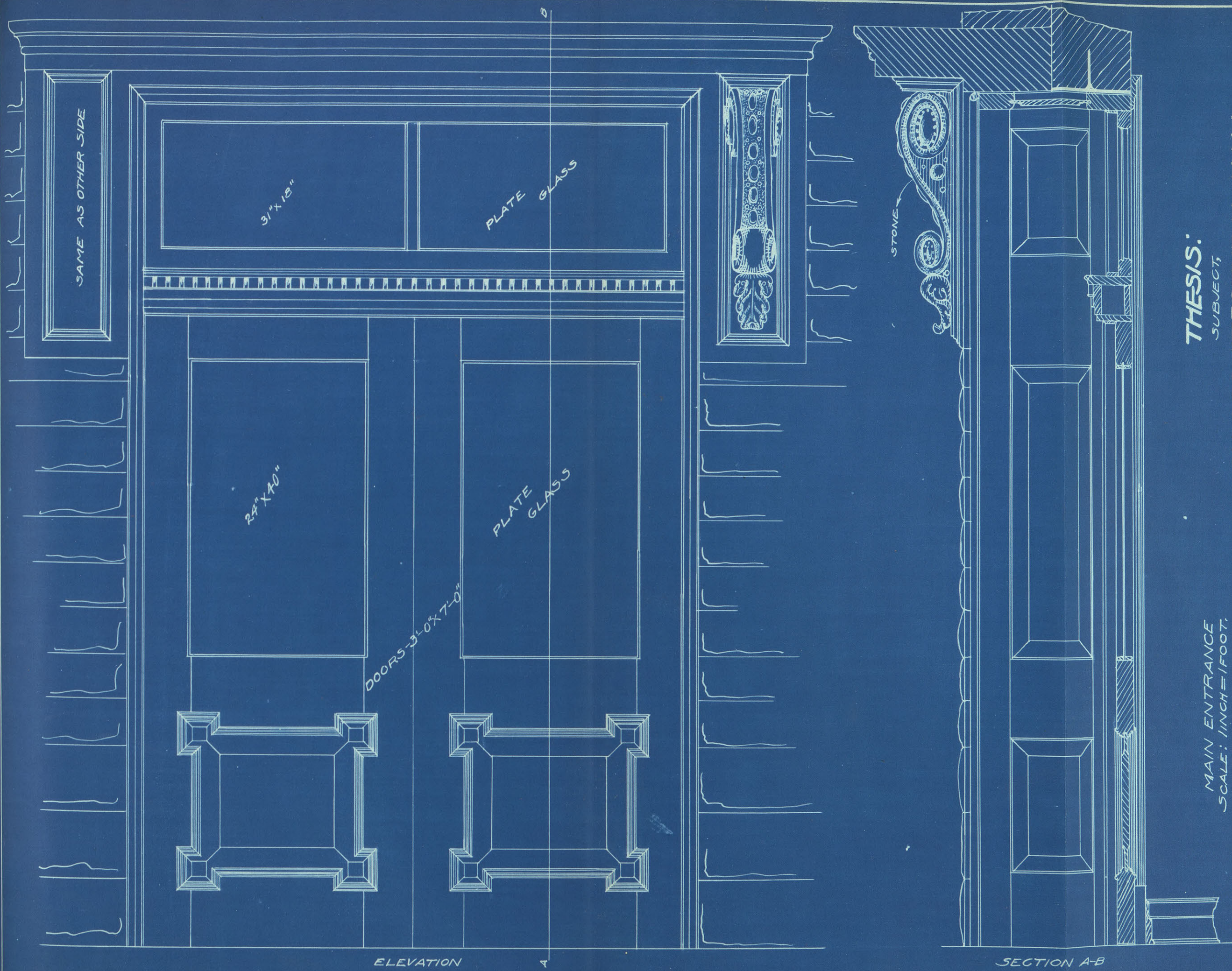
C. IRON PILASTER OF TRIPLE-WINDOWS
SCALE: 3" = 1 FOOT.



COLUMN
SCALE = 1 1/2" = 1 FOOT.

DETAILS

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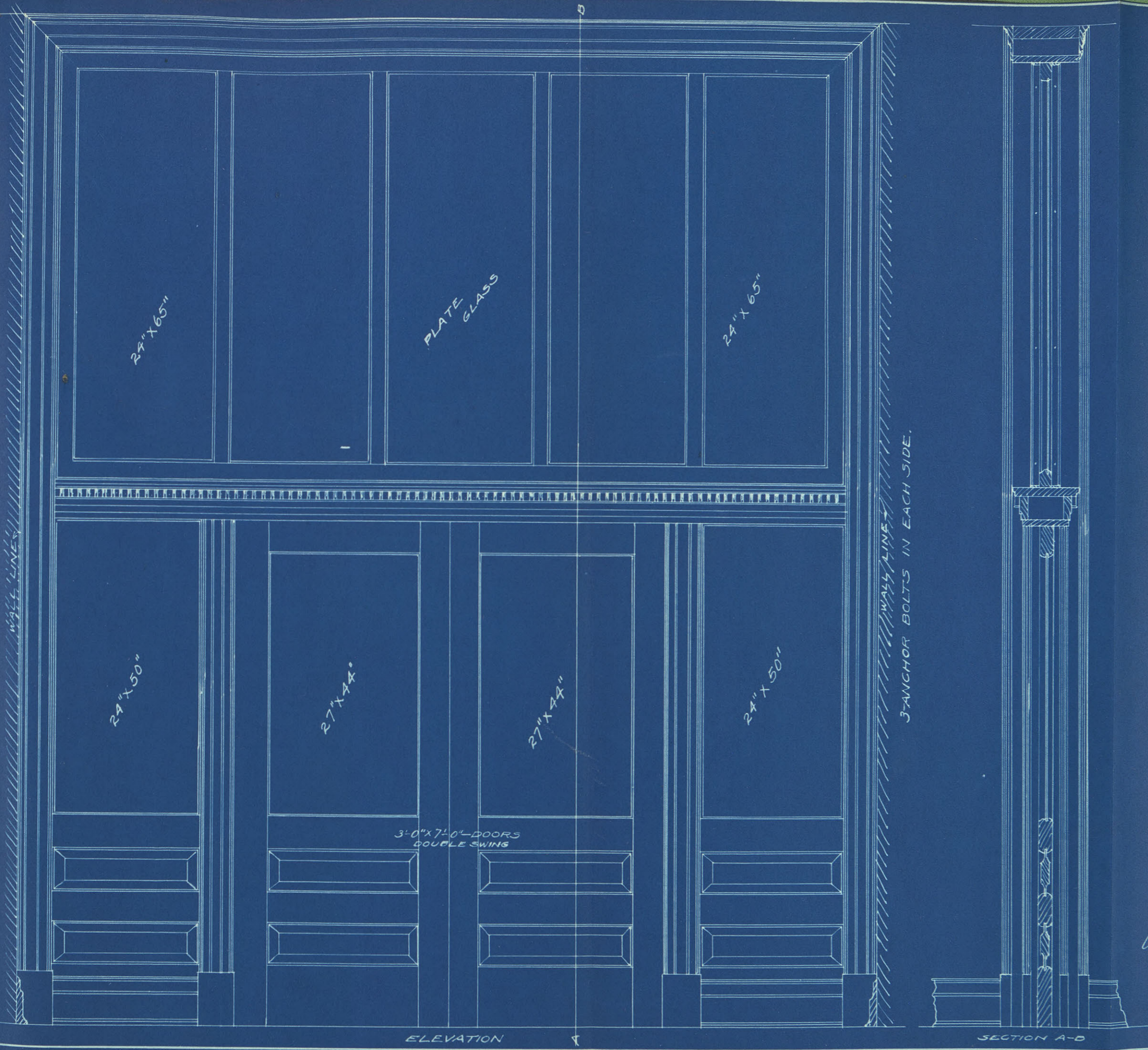
THESIS:
 SUBJECT,
AN ARCHITECTURAL HALL
 FOR THE
K. S. A. C.
 MANHATTAN KANSAS.

MAIN ENTRANCE
 SCALE: 1/4" = 1 FOOT.
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THESIS:
SUBJECT,
AN ARCHITECTURAL HALL
FOR THE
K.S.A.C.
MANHATTAN KANSAS.

GLASS PARTITION.
SCALE: $\frac{3}{4}$ INCH = 1 FOOT.

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ELEVATION

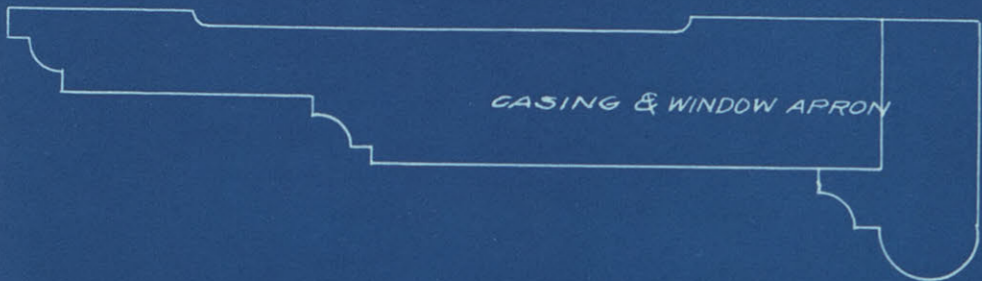
SECTION A-B



RETURN BEAD



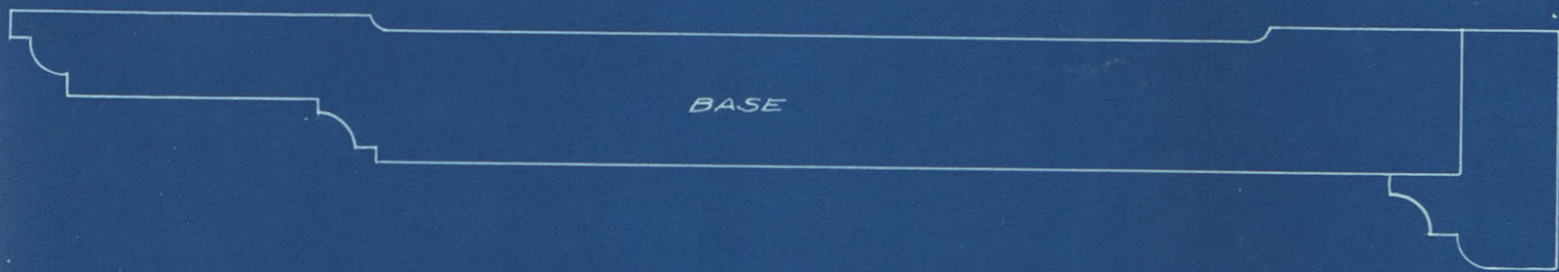
WINDOW STOOL



CASING & WINDOW APRON



FIGURE MOLDING



BASE



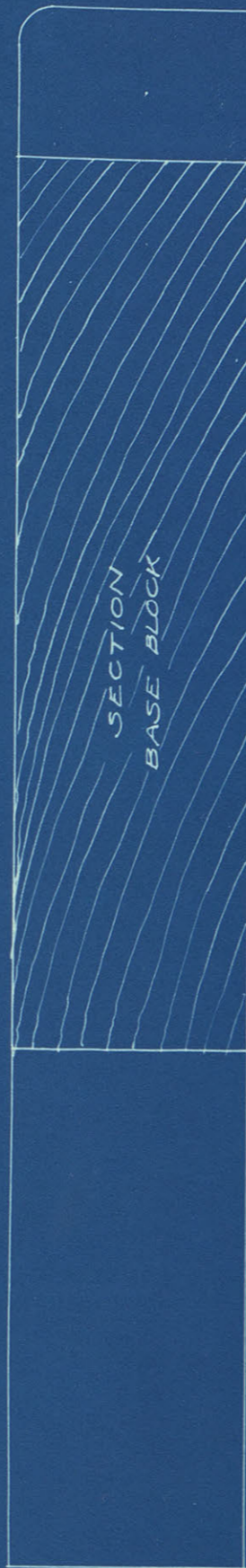
PARTITION CAP & SHOE.



STOP

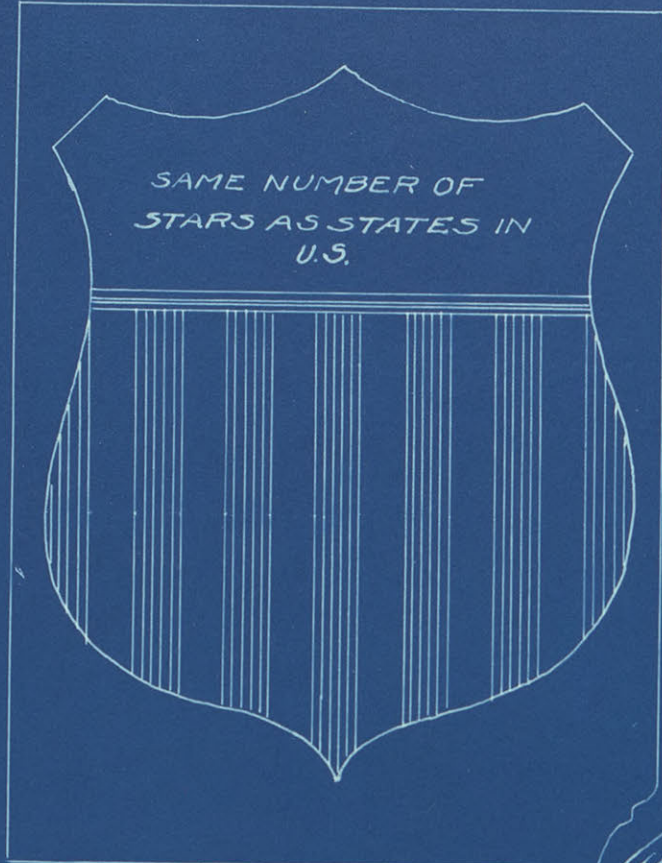


WAINSCOTTING MOLD



MILL SHEET
SCALE FULL SIZE.

W. J. Wilkinson
ARCHT. STUDENT 1905 CLASS.



SHIELD OF STONE
SCALE 1 1/2" = 1 FOOT.



ELECTRIC LIGHT & SHIELD

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