

DESIGN

for

A MUNICIPAL WATERWORKS BUILDING,

by

FRANK C. HARRIS

K. S. C.

'08

O.K.
I.D. Miller

SPECIFICATIONS.

Specifications for the Erection and completion of a municipal Pumping Station to be erected at _____, for the City of _____, according to drawings prepared by, Frank C. Harris, Architect.

This contract provides for the furnishing of all material and labor necessary for the erection and completion of the building in the time specified.

GENERAL CONDITIONS.

The drawings and specifications, prepared for this building, taken conjointly to each other and descriptive of the work necessary to be performed under the contract, and shall be construed according to their full intent, spirit, and meaning, either when taken separately or together.

MATERIAL AND WORKMANSHIP.

All materials must be of the best of the kind specified, and in every respect comply with all building laws and regulations. The workmanship must be of the best quality and thoroughly workmanlike.

No advantage will be taken of technical oversights or omissions and things fairly implied will be taken as included in the terms, workmanlike, complete, best, good, etc, which terms will be taken at their full meaning.

TIME OF COMPLETION.

The building shall be completed and cleaned ready for occupancy, and delivered in a complete, undamaged condition by the 15th day of _____, 19____, to the City of _____, at which time or as soon there after as

possible the architect and proper city authorities shall carefully and thoroughly examine the building, and if any part of the building shall be defective, either in material or construction, or not in accordance with the drawings and specifications, the contractor shall be notified and shall at once correct such faults.

In case the building shall not be completed in accordance with the specifications by the 20th day of October, 19 , the contractor shall forfeit ten dollars (\$10.00) for every day (Sunday excepted) thereafter until the building is completed and any fault properly corrected.

DRAWING.

The detail or large drawings shall be followed in preference to small scale drawings, and descriptive writing in preference to drawings.

DISCREPENCIES.

Should there be any discrepancy or disagreement between the drawings and specifications, or between the figuring and scale drawings, or between the large the large and small scale drawings; the wording of the specifications, the figuring on the drawings, and the large scale drawings, respectfully shall hold, and take precedence in every case.

Should there be any thing shown in the drawings and not described in the specifications, or described in the specifications and not shown in the drawings, the work shall be executed and carried out fully as if drawn, shown, or described in both. Any part of the building fairly implied and necessary to make the building complete and a finished job shall be considered as part of this contract to be fulfilled by the contractor.

Any apparent discrepancy in either the drawings or specifications will be promptly reported to the architect who will be the sole interpreter of the meaning of the drawings and specifications, and his decisions and directions will be followed.

IMPERFECT WORK.

Any imperfections such as shrinkage, settlements, cracking or breaking, or imperfect work of any description resulting from the use of a poorer grade of material than that specified, poor workmanship, deviation from the given plans and specifications without proper authority, or carelessness in construction, shall be made good by the contractor at his own cost.

REJECTED MATERIAL.

Every material entering into the construction of the building shall be subject to the approval of the architect. Any Material not fulfilling the requirements of the specifications for that material will be rejected by the architect, and must be immediately removed from the premises by the contractor who shall at once replace it with other material at his own cost.

The contractor shall provide free access for examination to all parts of the building at all times for both the architect and the city officials, and he shall in every way facilitate the examination of work and material.

SUB- CONTRACTORS.

No subcontractor will be recognized in the construction of any part of the building, but the general contractor will be responsible in all cases.

DIRECTION OF WORK.

There shall be kept on the work at all times a man thoroughly skilled in all the main departments of building, and who

has a technical knowledge of plans, methods of workmanship, and drawings, and who shall receive instructions and directions from the architect and contractor and give the proper direction to the workman.

PROTECTION OF WORK.

All work which is liable to damage from falling or passing material, weather, or other cause must be properly protected. When it is necessary the contractor shall secure any permits, and shall keep the building property insured until accepted by the City.

LIABILITY OF CONTRACTOR

The contractor will be held liable for infringement or any state law or regulation or city ordinance having reference to the erection of the building. He will also be solely responsible for any damage or injury to other contractors, or to laborers, if such injury or damage is the result of his delay, neglect, or carelessness. The contractor is requested to secure and read these laws.

INCOMPETENT WORKMAN.

Should any workman be incapable of performing work to which he is assigned he will be removed from such work by the architect and dismissed from the premises or set to doing other work which he is capable of doing.

MANNER OF JOINING.

Contractors of, or any part of the building will see that contractors for other parts of the building are fully advised as to the manner of joining, and thoroughly informed as to the work necessary to be performed by each. Every part of each department of the work must be complete, proper, workmanlike, and complete for the fulfillment of the specifications.

Contractors and Sub-contractors for any part of the work will clean up and remove all trash which has accumulated from and during the execution of this part of the work, and leave the premises ready for the next workman, or for occupancy.

OPENING FOR PIPES.

The contractor shall at the direction of the architect leave any opening in the wall which may be necessary, and for convenience in placing pipes for heating, plumbing, sewage or placing machinery in the building.

DUTIES OF THE ARCHITECT.

It shall be the duty of the architect to furnish all plans, details, or other drawings, and specifications for the building; to superintend the work for the city as its agent; to explain when necessary the meaning of the plans or specifications; give information as to how work is to be done; to pass judgment as to the fitness of workman, and to have power to order their removal. He will reject all material not in accordance with specifications and order their removal, and if such materials are not removed within a reasonable time, he will have it removed at the contractors expense. He will have power to order the removal and rebuilding of any work not properly done. He will settle all disputed matters and make estimates during the progress of the work as directed in the paragraph on payments.

PAYMENTS.

Payments shall be made to the contractor according to estimates made regularly by the architect as to the cost of work which has been done during the month, and the city shall pay the contractor this amount less twenty percent (20%) The final payment shall consist of all unpaid amounts including the 20%

retained from former payments.

BRICK WORK.

In case the brickwork is let to a separate contractor, the contractor for the brickwork shall furnish all centering for arches, lintel, bars, cramps, bolts, bonds, and every thing necessary to be placed in the wall during construction.

CEMENT WORK.

The contractor for cement work shall furnish all the materials specified to be used in the cement work, all forms of sufficient strength to retain such cement work firmly in place until proper time for their removal, and such forms must be properly braced. He shall also furnish sufficient skilled help, such as form setters, cement mixers, and finishers, which help shall be subject to the approval of the architect. The contractor shall also furnish all sheet metal forms for mouldings over windows, doors or other openings, which are to be constructed according to detail drawings. All outside finish must present a smooth surface of uniform color and be free from defects. The contractor shall furnish all metal lath or other re-enforcing material specified to be used in the cement work, and observe all precautions necessary to insure perfect work. In all places where cement is specified to be used it shall be of the best grade of Kansas Portland cement and subject to the approval of the architect.

After finishing and when sufficiently set to permit, the contractor will cover the cement with sand, burlap, or earth and keep it well moistened for three days.

CARPENTER WORK.

The carpenter work shall include all work not specified under other heads, and must be done by skilled men who thoroughly

understand the work they are assigned to do.

GENERAL INFORMATION.

The term city as used in these specifications shall mean the representative of the city duly appointed and vested with power to act as agent for the city.

LOCATION.

The building is to be located at the north-east intersection of _____ street and _____ avenue in the City of _____, and to face _____ avenue. Grade will be furnished by the city engineer who will also locate the south-east corner of the building. All other measuring will be done by the contractor who will be responsible for their correctness.

WATER.

Water to be used during the construction of the building will be furnished by the city free of charge, but the contractor shall pay the cost of making the tap and all piping necessary for obtaining the same.

CRUSHED ROCK.

Crushed rock specified to be used throughout the building will be furnished by the city at its crusher, transportation to its place of use to be furnished by the contractor.

BIDDERS.

Attention of bidders is called to the form for Bids which must be used in bidding, and failure to follow the exact form will be considered sufficient grounds for the rejection of an entire bid.

EARTH WORK AND EXCAVATION.

When the contractor has staked out the building he will remove all black surface earth to a place to itself, the same to be used to resurface the lawn when the building is completed.

All earth shall be removed to a depth necessary to execute the work as shown in the drawings. The side of the trenches shall be cut smooth and true to measure. Water shall not be allowed to remain in the trenches, nor shall walls or footings be placed upon soft earth, but all such places must be thoroughly tamped.

As soon as walls are above ground they shall be thoroughly cemented over the exterior until every part of the wall is covered with a minimum of $\frac{1}{2}$ " of cement, then pitch covered as specified. The space between the wall and sides of the excavation shall be filled with earth, watered and solidly tamped in place. The premises shall then shall be carefully graded by the contractor under the direction of the building superintendent and all surplus earth removed from the site. This grading shall be done as soon as the walls are sufficiently high above the ground to permit. The black surface earth shall be evenly distributed over the surface as soon as the building is completed.

SEWERS:

Before cement floors are laid or other work which would prevent laying of sewers, the contractor for such work shall give ample time for the placing of such drains or sewers in place by the contractor for that work.

FOOTINGS.

The footings for all contour walls shall be 16" in depth by 27" wide, extending 3" beyond the sides of 21" walls, and shall be of cement concrete composed of five parts broken stone, two parts of clean sharp sand, and one part cement. Cement and sand are to

be measured and mixed dry, the stone then added, and enough water added to make a pasty mass and then thoroughly remixed and immediately placed in the trenches in small layers and rammed down solidly until water rises to the top.

All interior walls shall have footings of the same depth and of the same constructions in every way except in width, which shall vary as shown in the drawings.

The footings below the pit walls shall be like those described above except in dimensions. They shall be 20" in depth and 30" wide. The top of all footings^g except in the pump pit shall be 6" below the basement floorline.

PUMP PIT WALLS.

The walls of the pump pit will be made of solid cement concrete composed of two parts of best clean, sharp, sand; five parts of crushed rock, thoroughly free from rock dust or screenings; the same to be furnished by the city and screened by the contractor, and one part of cement. The same to be measured and mixed dry, then wetted and placed immediately in forms and stamped down until the mass is solid and all interstices are completely filled. One inch in thickness of concrete is to be deducted from the dimensions given in the drawings, when the forms are set, this to be filled with the finishing coat described below.

All forms must be perfectly rigid and thoroughly braced so as to permit no slipping during the time the cement is setting; and they shall be left in place long enough to allow the cement to set so there will be absolutely no danger of the walls giving when they are removed.

Immediately upon the removal of the of the forms and before any dirt is allowed to get on the wall surface, the walls of

the pit shall be finished with a mixture of one part of long slack-
ed lime, one part of the same Cement heretofore specified and two
parts of clean sharp sand. This shall be placed on the wetted wall
and be hard trowled down to a smooth even surface 1" in depth.
The pit walls must be thoroughly protected, by the contractor
from injury after finishing.

CEMENT STEPS.

The cement steps of the building shall have, when finished,
the dimensions shown in the drawings. They will be made of con-
crete of the same compositions as used for the pit walls, and must
be cast in place. They will have a minimum depth of concrete of
6" at all points, including the finish. All cement steps except
those at the front of the building shall have sections of Wain-
wright's Edge Protectors the length of the step shall be placed
carefully in their proper position so that when finished they will
form the corner of the step. Each section shall be held by equally
spaced retainers manufactured for that purpose one for each 18"
in length of the step, forms shall be set in $3/4$ " to allow that
thickness of finish. The grout shall be thoroughly rammed
upon solidly tamped earth, and allowed to remain in the forms
only long enough, to allow the cement to harden sufficiently for
finishing; The forms must then be removed and finished with $3/4$ "
of a mixture of not less than one part of cement to two parts of
clean sharp sand, then the finish shall be properly floated and
trowled down to a smooth finish.

At the ends of the steps where they touch the earth retaining
walls the surface of the latter shall be thoroughly cleaned and
wetted. All steps shall be properly protected when finished,
and kept moist for one week to allow for proper setting.

RETAINING WALLS.

The retaining walls at the sides of steps, leading to ect, basement and pit shall be of cement concrete of the dimensions shown in the drawings and of the same composition and finish as the pump pit walls.

The earth retaining walls of the steps leading to the pit shall be thoroughly banded to the brick walls of the rear of the buildings by 1"x 1/4" steel bars 2 ft. of which are buried in the brick work and 2 ft. reaching into the cement work. These shall be placed every foot in height of the wall.

Every precaution mentioned in the specifications for the pit walls in regard to forms of finish and method will observed in these walls.

BRICK WORK.

All Brick walls and work is to be built of Coffeyville or Iola machine made vitrefied brick thoroughly imbedded in mortar of a composition as follows. All exterior walls to 1ft. above the grade line the brick shall be laid with mortar composed of one part of cement and three parts of clean sharp sand, screened to remove all impurities, thoroughly mixed dry, then wetted to a pasty mass and used as fast as prepared. For all interior walls and all exterior walls above 1ft. higher than the grade line, a mortar shall be used composed of one part of cement three parts of sand and enough lime to make a mass which will work easily under the trowel, and not exceeding one part of lime to the above mixture.

All brick must be thoroughly drenched before being laid. Every sixth range of brick shall consist^t of headers over lapped in successive courses until the band is complete through the wall. All interior walls and walls more than 4" above the 1st floor joists shall be three brick walls unless otherwise specified.

There shall be built in the wall on the interior of each room except the boiler room, 2"x4" band strips placed at 6", 4ft., and 8 ft. respectively from floor joists. The furrowing shall be firmly nailed to these bands.

Walls shall be considered to terminate at the top line of the cornice for exterior walls, and for interior walls where shown by section of drawing. All surplus mortar will be removed from the joists with the flat edge of the trowel.

Measurements all exterior brick walls and foundation walls up to 4" above the first floor are to be four brick walls.

On the exterior of walls to be finished, shall be left protruding firmly anchored wires which shall hold the metal lath.

One wire shall be placed in the wall for every two square feet of exterior wall surface.

Thoroughly anchored $\frac{1}{2}$ " bolts shall be placed for anchoring the wall plates 4' apart on the tops of the wall.

EXTERIOR FINISH.

All walls shall be finished on the exterior by a mixture of one part of long slacked lime on part cement and two parts of the best clean sharp sand mixed thoroughly and evenly and used immediately after mixing. The surface of the exterior of the building below the cornice shall be covered with a uniform smooth coat of

finishing material $\frac{3}{4}$ " in depth, care being taken to leave all wires protruding placed for securing the lath in place. This shall be firmly trowled into place. Upon this shall be placed covering the entire surface, Herringbone's Expanded Metal lath or other similar metal lath and equally good for the purpose. Over this shall be spread mortar of the same composition as the first coat. This shall be trowled hard into the lath until the latter is completely encased and the mortar unites solidly with the first coat, this forming a plaster finish 2" thick. The surface shall be trowled down to a smooth even surface entirely free from unevenness.

Only skilled help shall be employed.

EXTERIOR MOULDINGS.

Mouldings over the exterior of windows and doors, unless otherwise specified, will be made in forms as shown in detail drawings and composed of mortar used for finishing. These mouldings must be held in place by strip of metal lath thoroughly secured to the brick wall.

The architect will require that great care be taken in forming the mouldings to give them sharp well defined corners and the proper form and dimensions.

IMITATION RANGE WORK.

The finish below the water table (which reaches 6" above the first floor joist) will be of the same mortar but $\frac{1}{2}$ " thicker on the last coat. Lay it off in imitation Renaissance range work, beginning with the 12" course which forms the water table and making the other courses, except the ground course, each 9" on centres of divisions. Divisions will be made with a special trowel forming a V shaped depression $\frac{3}{4}$ " wide with rounded corners, of $\frac{1}{2}$ " radius, and $1\frac{1}{2}$ " deep. Divisions will be made about windows as shown on the elevations and detail drawings. The bottom range must reach to 6" below the grade line, to which depth the wall will be finished. The water table will be the arc of a circle 3" radius.

ROOF.

The rafters shall be of 2"x6" unless shown on drawings or specified to be different. They shall be supported by beams of the same material as designated in the drawings. They must be cut accurately and spiked together and to the supports. Bolts shall be used where necessary to secure solidity.

ROOF BOARDING.

Over the rafters shall be laid with closely driven joints 1"x16" stock surfaced, grooved and spliced, free from large loose, or black knots; all to be nailed rigidly in place. All unevenness or sharp corners are to be removed before the tar paper is put on.

ROOF TAR PAPER.

On the sheathing shall be laid Barrett's Tarred Roofing and Sheathing Felt #2, weighing 16# per 100 square feet, 32" wide. All seams must lap 2" and the paper when laid, must be free from tares. This is to be kept in place by good plaster lath laid perpendicularly 2ft. apart, with not less than six nails to the lath

ROOF STRIPS.

Strips are to be 1"x2", surfaced on one side and securely nailed on plaster lath over entire roof; commencing with a double strip at the eaves, set perfectly straight and true, and accurately spaced at equal distances to fit the Mound City "A" tile used. The top strips should not be more than $3\frac{1}{2}$ " nor less than $2\frac{1}{2}$ " from the apex of the roof.

The bottom or eaves course of the tile are to project over strips not less than 2", to allow free drip of water into the gutter. All valleys are to have 1"x2" strips nailed 6" on each side of centre line of valley. Each tile in the eaves course and on the edge of the gable on front of building, and afterwards, every fourth tile over the entire roof is to be securely fastened to the sheathing with #15 copper wire attached to the pieced lug on the under side of the tile and then fastened to a copper staple driven into the sheathing.

VALLEYS, HIPs, RIDGES, ETC.

The valleys are to be covered with 20 oz. copper which is to be well fitted over the valley strips and to extend beyond the outside of the same, not less than 6" on each roof, and the outside edge to be turned over $\frac{1}{2}$ " until it almost touches the metal, so as to prevent water from running on the roof. Separate and extra pieces of roofing felt are to be laid under the copper, wide enough to extend well under the main roof felt on each side of the valley. The roofing felt is to extend over the top of the outer 6" of valley metal up to the valley strip on each side of valley gutter.

Where roofing tile comes against the walls, it is to be fitted as close as practical and then lay copper flashing well bent and fitted into the tile and also against the wall not less than 8" high, then cover this with the sheet metal cornice specified to be used.

All crestings and hip-rolls are to be laid in good rich cement mortar colored to match the tile, and all joints are to be neatly pointed with this cement. A hip board of necessary thickness and width is to be well fitted and securely nailed to the top of hip rafters for receiving the hip rolls.

The tile

TILE.

The tile to be used are Mound City "A" tile covering a space 9"x12". Hip roll and starter to match is to be like figure #24 H4 with starter to match; and cresting figure #32 R2 selected from the catalogue of the Mound City Roofing Tile Co. of St. Louis, Mo.

GUTTERS.

Gutters are to be of 20 oz copper laid as shown in detail drawings, extending over the edge of cornice metal and over double

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strips which supports first course of tile and to be nailed to back side of these strips. The gutters are to be given a uniform fall of 1" in 20" to the outlets. All joints are to be securely soldered water tight to the edge of the metal.

SHEET METAL WORK.

This will include cornice conductors, ceilings, gutters, flashings and counter flashings. Gutters, flashings and counter flashings are to be as specified under the title of roof.

Conductor outlets from gutters shall be of 20 oz. copper to 5" below the cornice through which they pass. These outlets shall be riveted and securely soldered to the gutter.

Conductors from these outlets to the ground will be of corrugated galvanized iron 5" in diameter. They will be held firmly in place every 6ft. by malleable iron conductor cramps which are secured in the brick work and finish, and such conductors shall at all points be 2" from the exterior of walls. Conductors will terminate 4" above grade line.

CORNICE.

The cornices shall be of 20 gauge galvanized iron, made according to detail drawings furnished, and secured firmly in place as shown. All mitres are to be both riveted and soldered, and interior braces used.

All joints shall be riveted every 6" and soldered. All galvanized iron work shall be riveted where possible to do so. Brackets and Mollions shall be riveted securely to frieze and soffit of cornice. Small ornaments may be soldered on but all joints must be soldered for the purpose of making smooth and finished work but not for holding work together except where rivets cannot be used.

STRUCTURAL IRON.

The general contractor shall furnish all bolts, ties, bonds, linlets, truss irons, and achors specified to be used in the building under the different headings, and must have them on the premises as soon as contractors for work in which they are to be used, are ready for such iron work. They are to be of size given in other places.

ROOF TRUSSES.

Roof trusses are to be constructed as shown in detail drawings, built up of "A" 2"x12" material, nailed solidly together and bolted with $\frac{1}{2}$ " bolts as shown.

Cast iron plates 1" thick by 12"x12" are to be placed on brick walls to receive the weight on trusses.

Ridge supports are to be built of the same material and in a similar manner. Bolt every 2ft. alternately 2" from top and 2" from bottom. Work on all roof supports must be done thoroughly and bolted where this would add to solidity or strength. All work shall be done to the entire satisfaction of the architect or must be rebuilt.

PLASTERERS SPECIFICATIONS.

All walls except in the boiler room and pit walls are to be plastered; also all ceilings except in boiler room and where metal ceiling is to be used.

Furring,- All contour walls are to be furred as per carpenters specifications.

Best white pine lath with full $3/8$ " joint is to be used. Break butt joints every fifth course. Lath are to be thoroughly nailed with 3 's. course lath nails. Lath must be thoroughly secured at all angles to prevent "springing off" and cracking plaster. Lath must extend clear down to floor, and all lath must be nailed horizontally and not vertically.

Mortar is to be made of Agatite or course cement mortar, averging about 900# per 100 sq. yds. Mortar for lath work shall be well fibered and in all cases shall be made ready for use as directed by the manufacturer. Trowel down all joinings to smooth surface and remove all unevenness in the coat. On brick walls all low places holes or depressions must be slushed up or filled with mortar a sufficient time before plastering to allow hardening so first coat will not crack.

The brown mortar will be put on in two coats; The second after the first has become semi-dry. The latter must be made straight in every respect and be applied in a thorough manner, and is to be composed of stucco and fine screened sand in the former ratio.

All lines, corners, and angles must be cut clean and true, and shall be vertical or horizontal as the case may be.

The brown coats must be dry enough before floating to use water in floating down. and this must be done thoroughly, using

cork or carpet covered floats for the purpose.

The hall arch shall have neatly and uniformly rounded corners, well executed.

Bath offices and toilet on the first floor are to be finished with a coat of plaster of Paris hard finish done in a thorough manner. Should this finish show chip cracks, blisters or stains, or the brown mortar slacked so as to show through the surface, it will be considered as a bad job.

In the basement a cement base of good rich cement shall extend to 8" above the floor and shall be solid back to the brick wall.

Where wainscoting is specified in the vestibule, lobby, halls or stairway, it shall be made on plaster finished surfaces and all grounds shall be finished for the placing of the stiles and rails to all panel work, also for chair rails and bases, where used.

CARPENTERS SPECIFICATIONS.

Unless otherwise specified lumber to be used in this building is to be of good quality of Southern yellow pine and of the dimensions shown on drawings or named in specifications. Lumber specified as 2" will not be accepted when it measures less than 1 5/8", 1" material 3/4". All material specified over 2" shall be full size when dry and unfinished. All dimension lumber shall be free from large or loose knots, sap, or wind-splits which would impair its strength. Finishing lumber shall be clear and thoroughly seasoned, free from knots or other defects and No 1 in all respects.

Supports are to be of dimensions given in drawings. First floor joist under offices and adjacent hall are to be 2"x12". Joists under lobby, vestibule, and front entrance are to be of full size 3"x12" material, doubled where shown in drawings and under partitions. All joists are to have not less than 6" bearing on supports.

Studs are to be doubled at all angles and around all openings. Partition studs set 16" on centres, with single plate below and double plate above, except in basement where they attach to floor beams.

Plates on brick walls are 2"x10" thoroughly secured by bolts as specified in brickwork.

Ceiling joists 2"x6" as shown in drawings.

All joists except over pit room, Lobby, Vestibule, and entrance are to run the narrow way of building.

FURRING.

Furring is of 2"x2" material securely nailed to bond strips in walls by a spike nail to every such timber. They shall be set evenly and surfaced to a uniform plane to receive lath.

FLOORS.

All floor joists having a span of over 10 ft. are to be given an arch of $1/4$ " for every 6ft. span and to be evenly surfaced to receive the construction floor. The construction floor shall be of good material surfaced and splined and to be carefully joined.

Flooring shall be of the best quality vertical grained narrow flooring, thoroughly seasoned, and free from all defects, and to be in pieces at least 12 ft. long. It shall be securely nailed with one 8s. nail at every joist. All joists must be closely fitted and square. After the floor is laid the joints must be carefully dressed with a floor plane and the whole floor thoroughly covered with boiled linseed oil.

DOORS.

Doors are to be framed and built as shown in detail drawings and true to given dimensions. Frames are to be made of the best grade of clear yellow pine, and all jambs and casings shall be selected to match in grain and color. Sizes of doors are given on floor plans and frames are to be cut to fit such doors. Frames are to be rigid and thoroughly secured to the false jambs, and rabbited for the doors.

Doors shall be made according to detail, having panels of given dimensions, and be built of three thicknesses, with grain reversed, to prevent warping. All thresholds shall be of quarter sawed oak $5 \times 7/8$ " beveled on both edges.

Doors will swing open as indicated on plans. Between the vestibule and lobby, doors will swing both ways. All material entering into the construction of doors or frames shall be guaranteed by the contractor not to warp or start. All doors and frames must be of thoroughly seasoned material.

Transoms are to be built where shown in the drawing. They shall have double strength American glass, and shall be built in solid.

WINDOWS.

Windows will be framed and finished as shown in the sections, elevations, and detail drawings. All dimensions shall be as given in such drawings. The material used shall answer the same requirements as those given for doors and door frames. Plate glass not less than 1/4" thick with beveled edge shall be used where shown, and all other glass is to be of first class double strength American glass. All windows shall fit frames snugly but will not bind. Windows hung with weights shall be evenly balanced and so hung that weight will not catch. Sampson 1/4" woven window cord shall be used. Weights will be of cast iron. All sashes shall be of the best white (not sugar) pine, and shall be first class in every respect. They shall be 1 3/4" thick, and of usual make. Give the inside a coat of oil and the outside and rabbet a coat of priming before glazing.

The interior finish of the windows shall have form shown by details, but shall not be put in place until after plastering is finished, then shall be cut to fit walls closely.

Pulleys will be 2 1/2" electro bronze finish. 2"x2" lug strips shall be used on windows as shown in details for holding them firmly in place. All windows not so lugged must be secured solidly in place in the ordinary way.

Before placing windows or frames in place they shall be thoroughly primed with a coat of linseed oil and ochre.

Frames must be set plumb and true with the wall, and thoroughly braced while brickwork is being placed around them.

Before dressing finish is put on, windows frame joints will be carefully planed and the entire surfaces sandpapered to a smooth surface.

TILE FLOORS.

The outside front entrance of the building is to be covered with Interlocking rubber Tiling imbedded in cement mortar composed of one part cement and two parts fine screened sand. Tiling is to be laid according to directions of the manufacturer. Floor shall slope 1" from entrance door to edge of steps. The color pattern and style of tiling will be furnished by the architect.

HARDWARE.

All parts of the building shall be complete with locks, hinges, weights, pulleys and other necessary fixtures.

The contractor shall figure \$1.00, for hardware exclusive of weights for first floor windows and .65¢ for basement windows exclusive of cords, weights, and pulleys.

The stop beads are to be secured by 12 electro bronze head screws to each of window frames.

A sum of \$18.00, shall be reserved by the contractor for hardware for the front entrance doors, the same to be disbursed by the architect. The contractor shall figure \$4.50, per door for other doors to be used likewise.

Sargent's ornamental hardware shall be used on all doors and windows, and of a matched pattern.

PAINTING AND WOODWORK FINISHING.

All window and door frames, as specified, before setting. Later all exterior exposed wood-faces are to receive two coats of best lead and oil paints, adding such coloring pigments as

are necessary to make the color selected by the architect exterior of windows sashes is to be similarly treated.

On interior woodwork all joints are to be planed down smooth and all wood surfaces to be thoroughly sandpapered, then three coats of above specified paint shall put on according to color selected by the architect.

The vestibule is to receive two coats of Pratt's and Lambert's spar Varnish, the first to be sandpapered and the last left in the glass.

All galvanized iron cornices are to receive one coat of venetian red and oil and two coats of best lead and oil paint of the exact shade when dry of the cement plaster exterior walls. Conductors shall be painted in the same manner. The last coat shall be thoroughly and evenly sanded with fine screened sand, as soon as applied, to a uniform color and finish.

The treads of stairs shall be given a heavy coat of oil which shall be rubbed down with burlap. Floors shall be smoothed and oiled and rubbed down with weighted brushes.

Woodwork in toilet rooms shall be smoothed and sandpapered and then be given two coats of Rinals Bros. white enamel paint on one coat of white lead and oil.

The metal ceiling shall be painted with two coats of paint the same as used for last two coats of cornice and colored at the direction of the architect.

In all work all holes, bruises, or other defects shall be filled with shellac or putty and all paint applied by experienced painters and thoroughly workmanlike in every respect.

INSTRUCTION TO BIDDERS.

Bidders will note carefully the following instructions,

and see that they are carefully complied with.

Proposals will be received until 5:00 P.M. Wednesday,
June____, 19____, at the office of City Clerk at _____,
_____.

Each bid will be accompanied by a certified check for
3% of amount of bid. The City council preserve the right to reject
any or all bids. .

When any bid is accepted the contract must be signed with-
in one week of such acceptance, and a bond of \$10,000, will be
required to insure the execution of the work and its delivery at
the proper time.

Contractors are required to use the following form of
bid.

FORM FOR BIDDERS.

TO The Honorable Mayor and Council of the City of _____,
_____.

Gentlemen,-

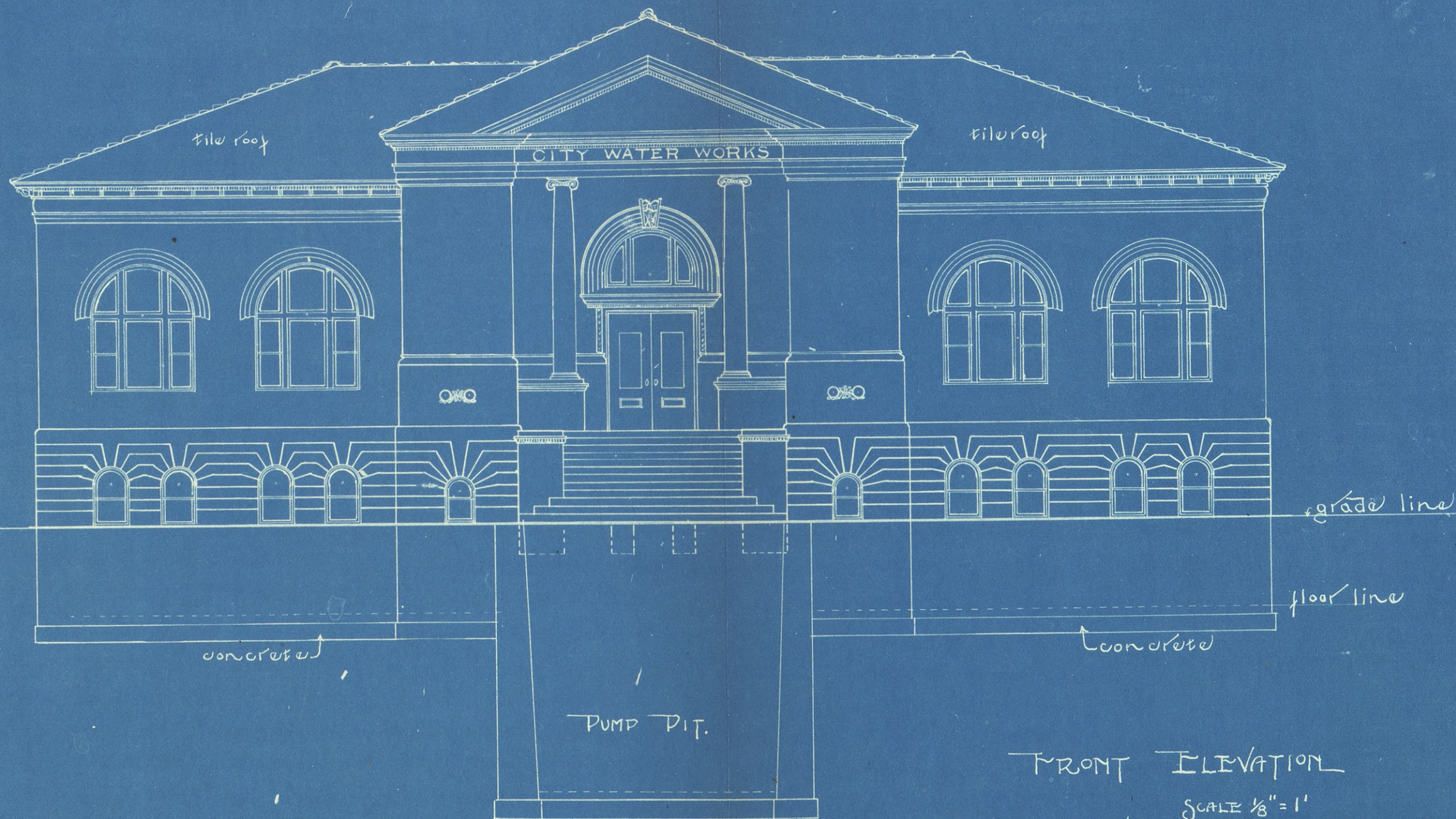
_____ propose to erect and complete the
Municipal Waterworks Building according to plans and specifications
furnished by Frank C. Harris, Architect, for the sum of _____,
_____, Dollars, \$_____,

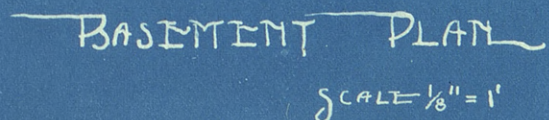
Herein find enclosed certified check for 3% of bid.

Signed,_____.

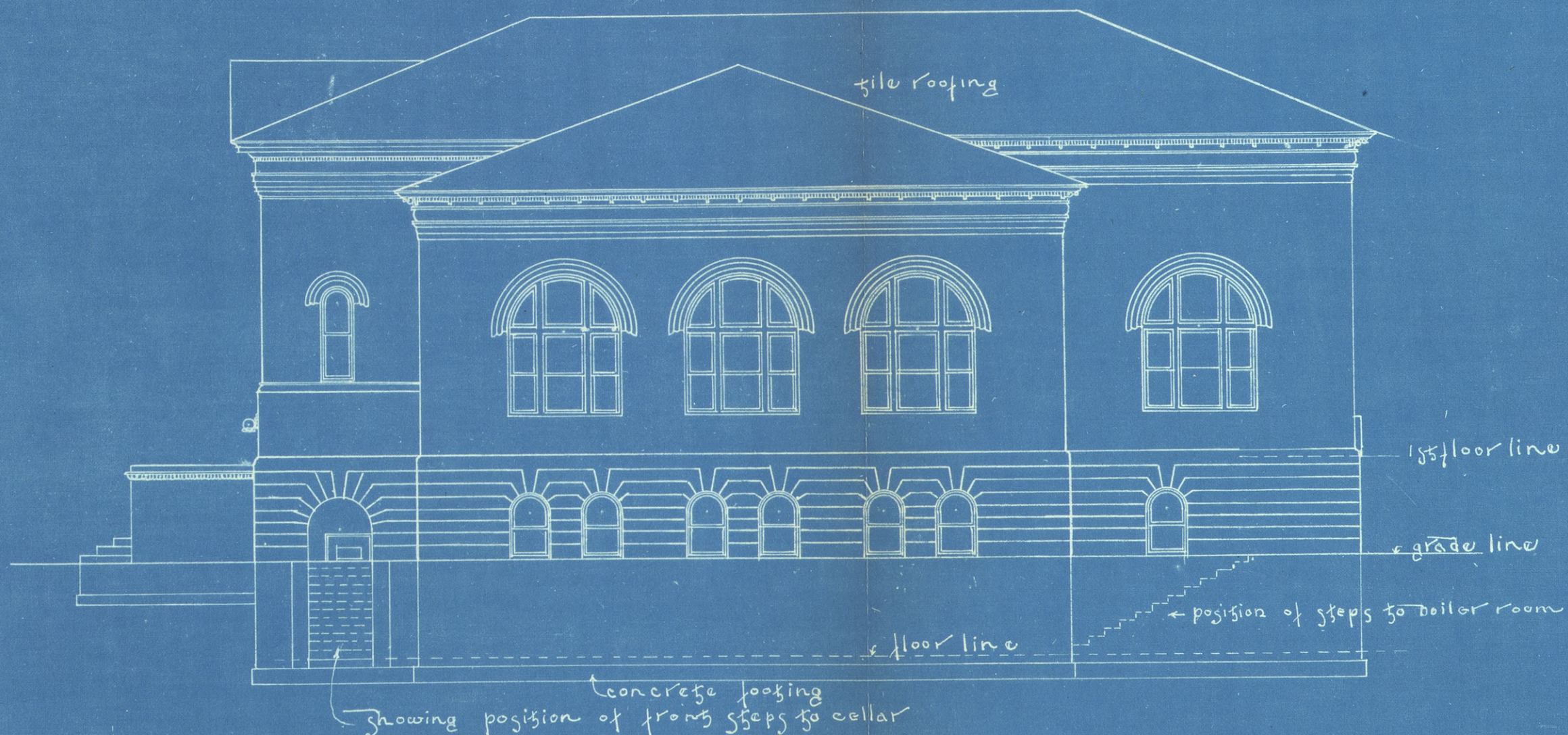
DESIGN
FOR
A MUNICIPAL WATER WORKS BUILDING
THEESIS
BY
F. C. HARRIS
K. S. C.
'08

1





4



RIGHT ELEVATION

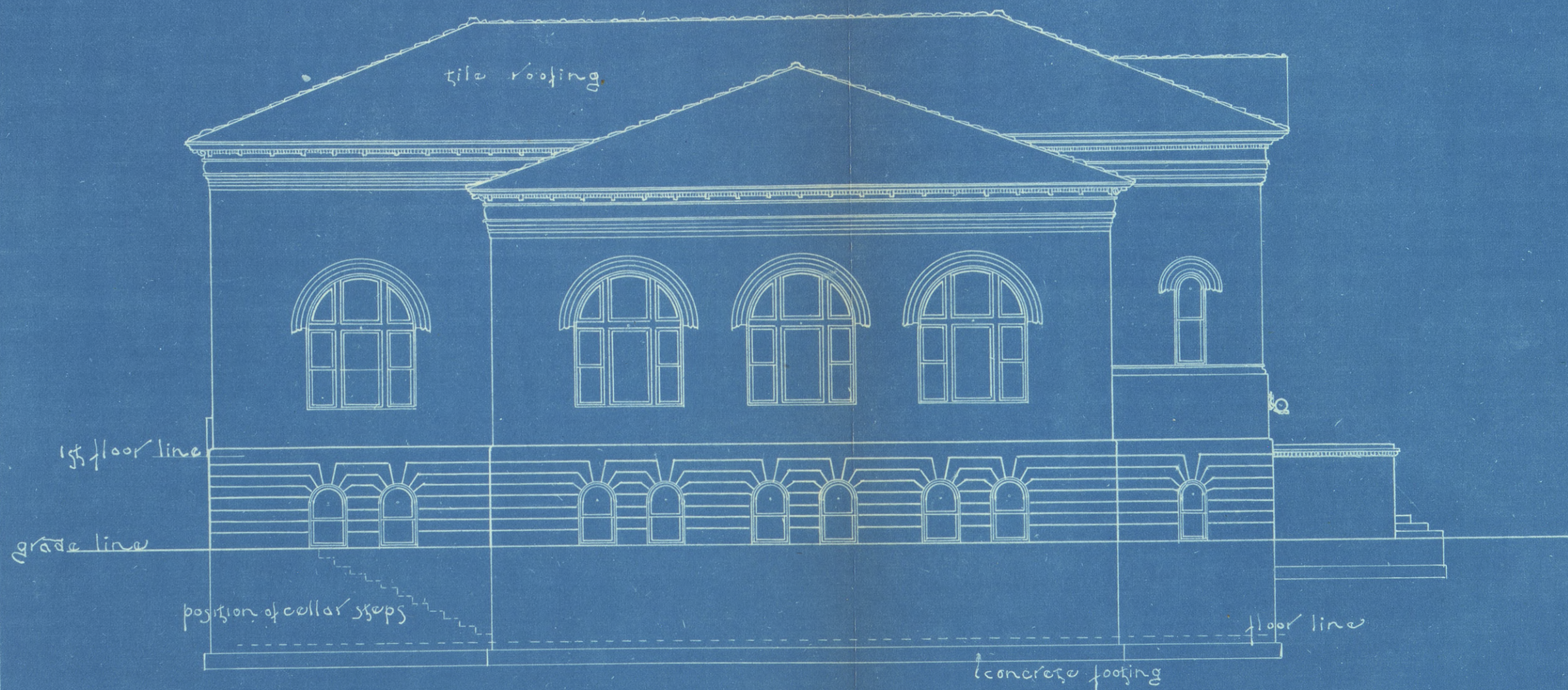
SCALE $\frac{1}{8}'' = 1'$

5



REAR ELEVATION

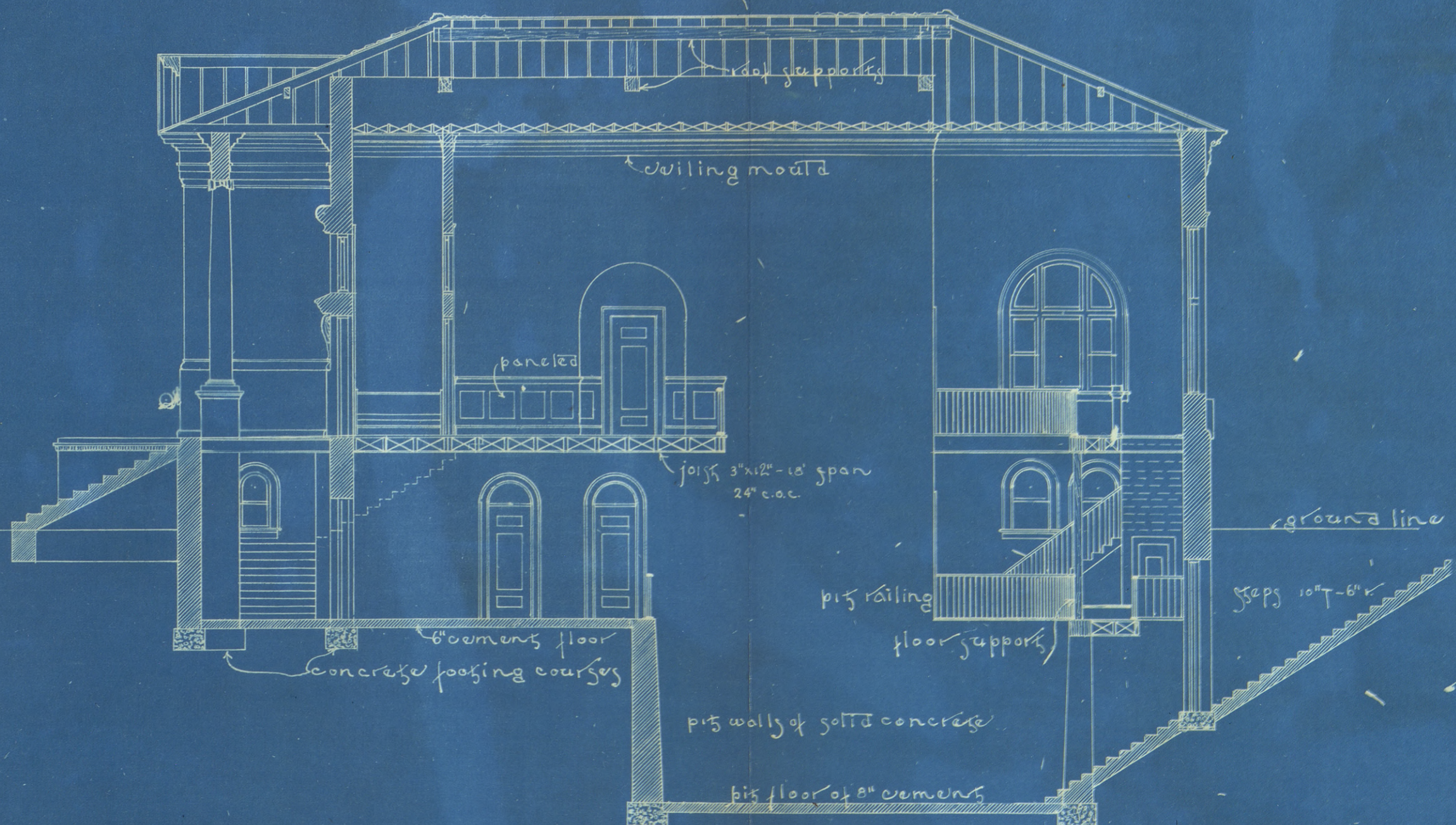
SCALE 1/8" = 1'



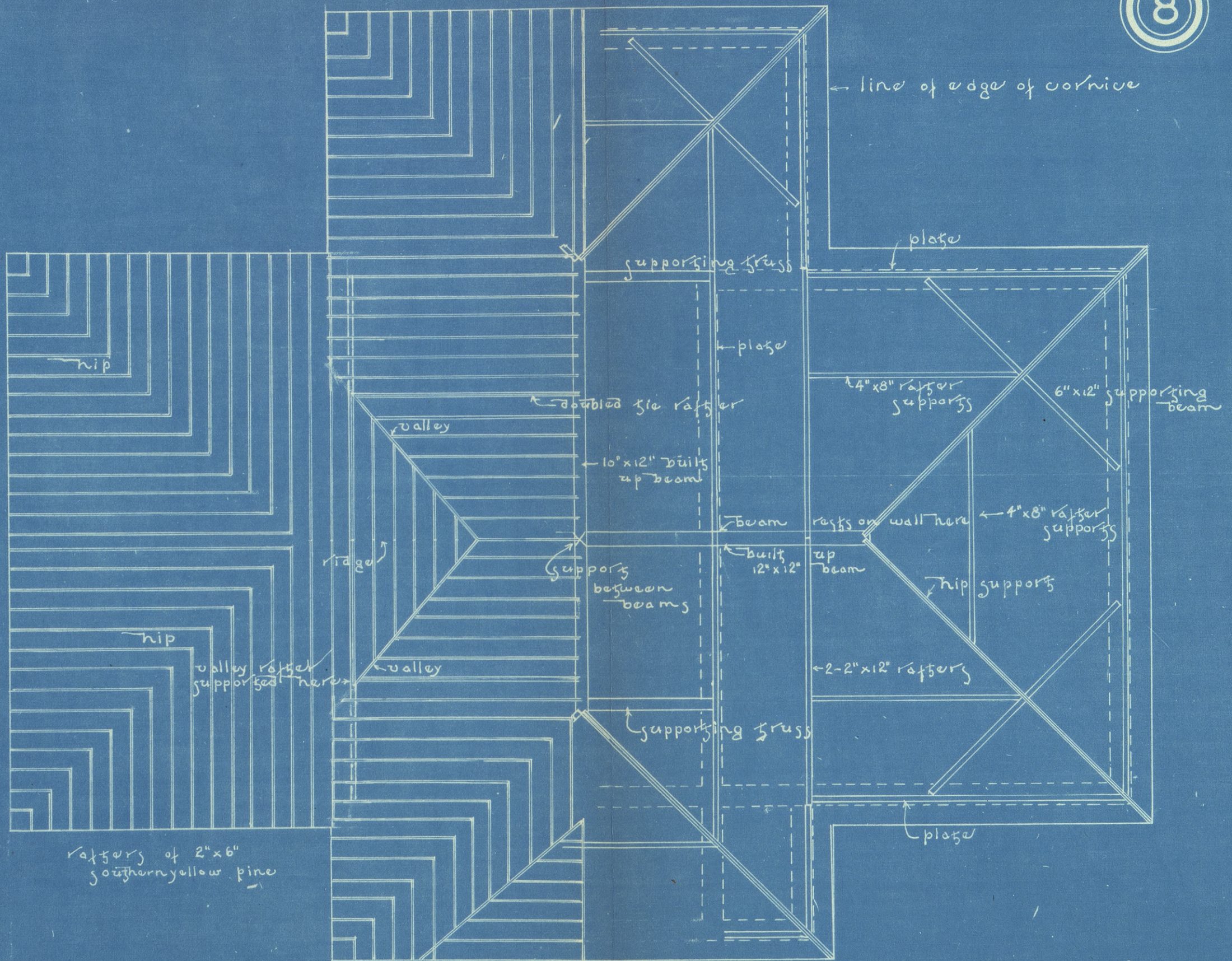
LEFT ELEVATION

SCALE $\frac{1}{8}'' = 1'$

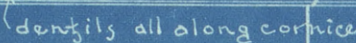
7



SECTIONAL ELEVATION
SCALE $\frac{1}{8}" = 1'$



PLAN of ROOF and ROOT SUPPORTS
SCALE 1/8" = 1'



CITY WATER WORKS

Height of roof edge of wings

vertical dentals

File root
as specifications
descriptor

detail drawing
show all moldings

Mouldings and ornaments over entrance of high grade staff work

see detail of column

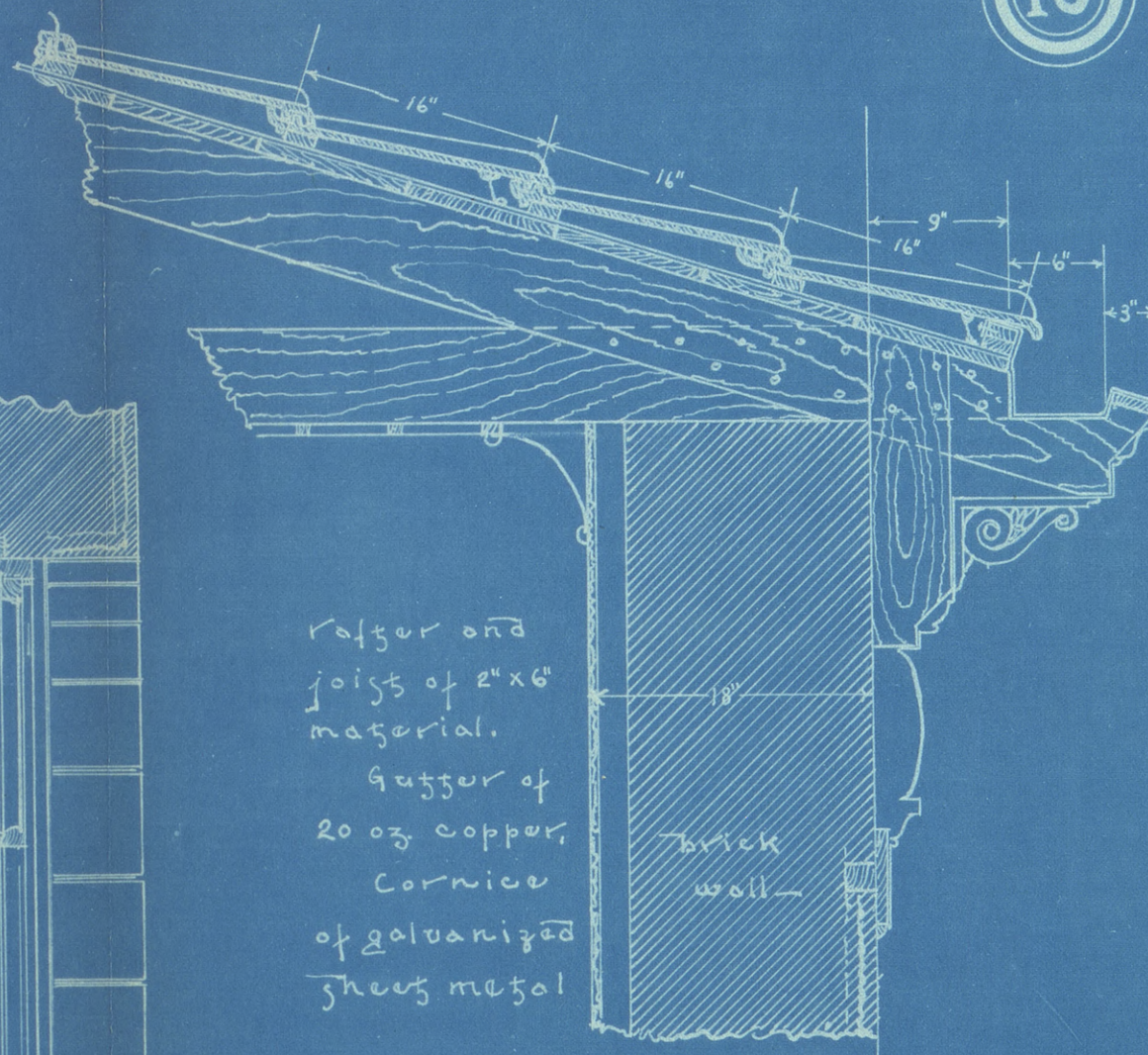
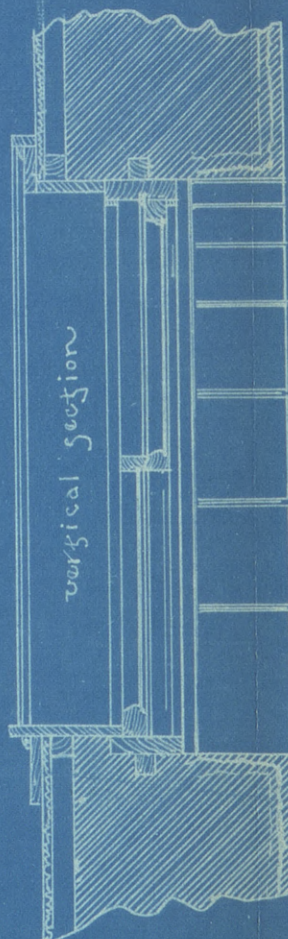
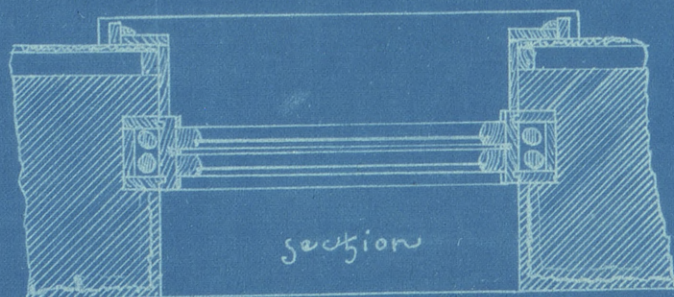
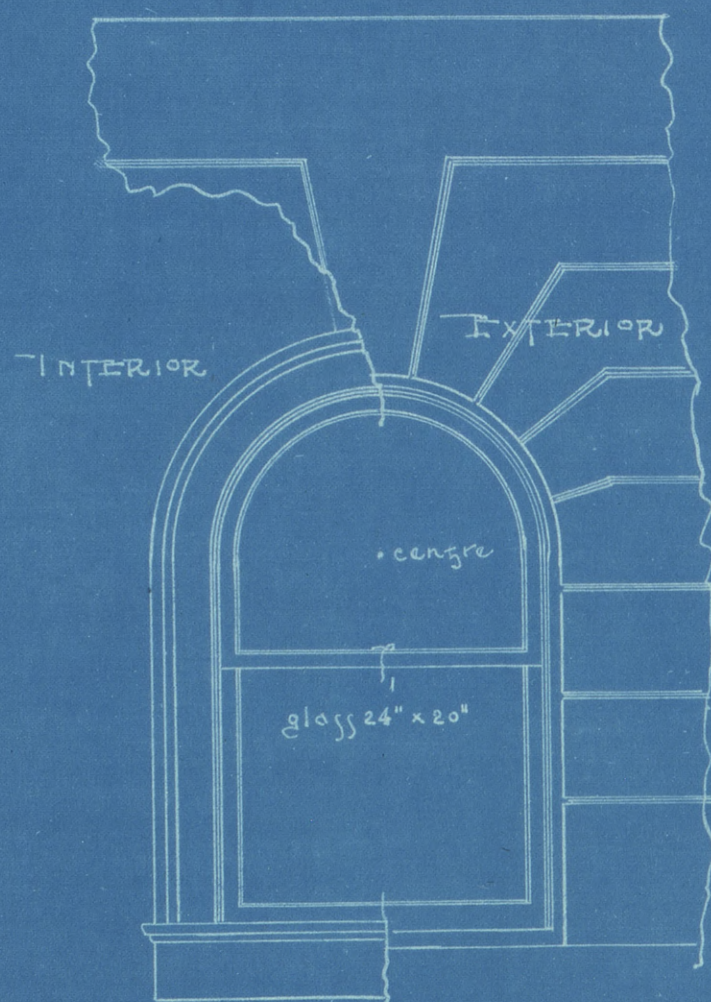
1210"

5000 oil of lamp

steps 6" rise and 12" tread

DETAIL OF FRONT—

SCALE $\frac{1}{4}'' = 1'$



Rafter and joists of 2" x 6" material.

Gutter of 20 oz copper.
Cornice of galvanized sheet metal

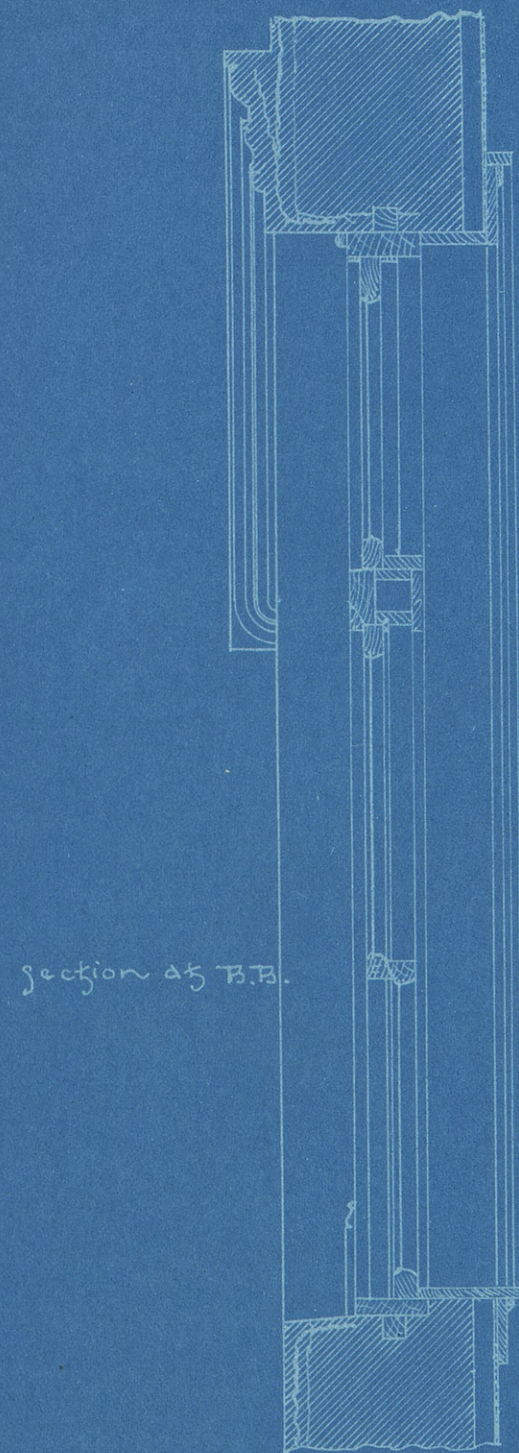
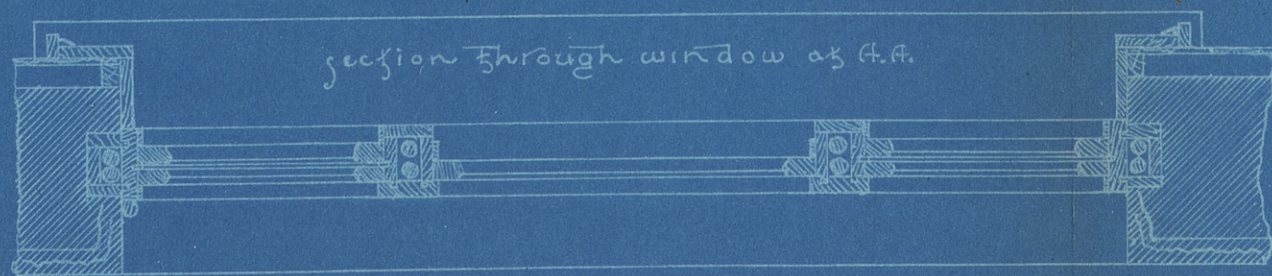
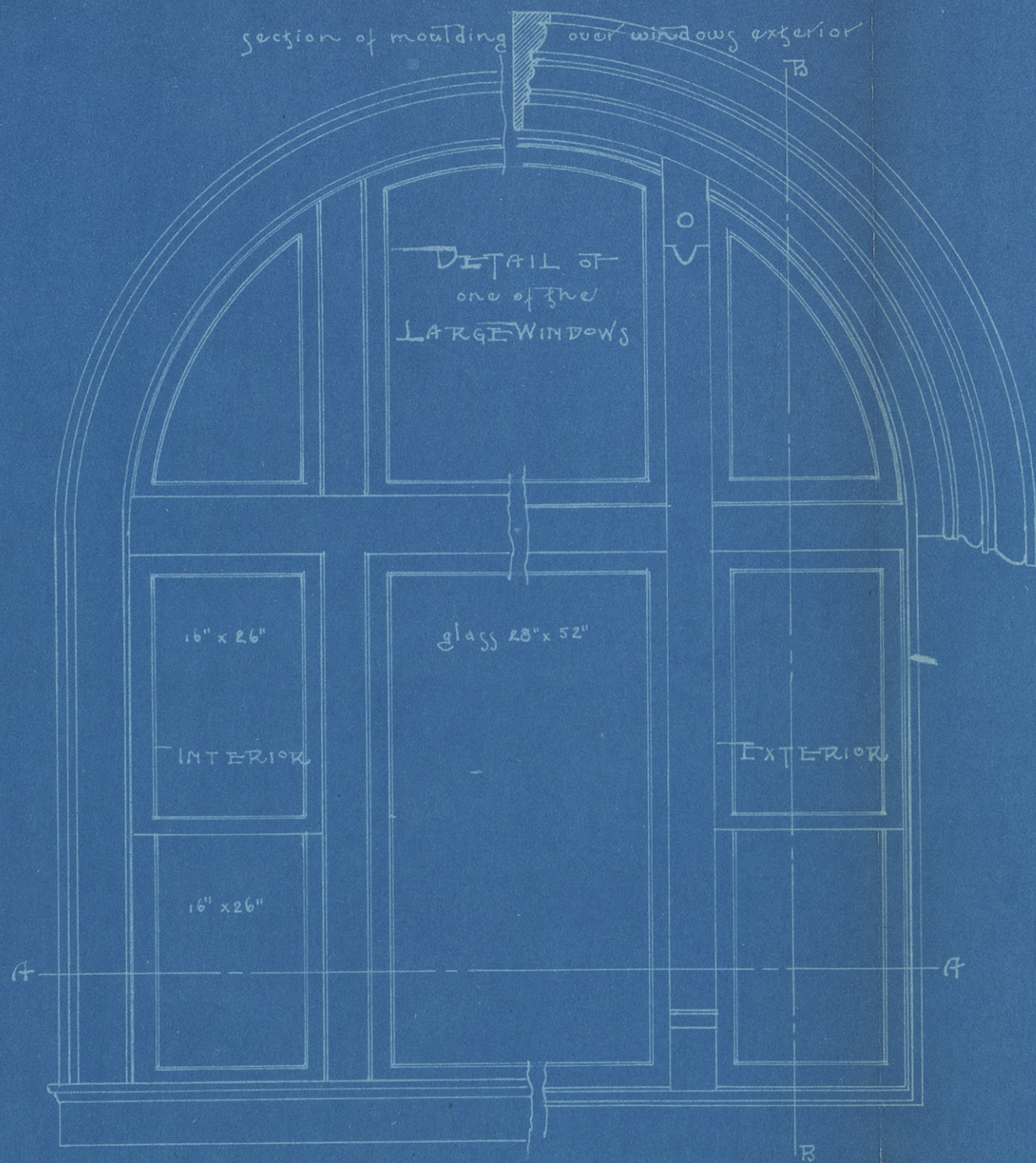
MOUND CITY "A" tile roof.

DETAIL THROUGH CORNICE

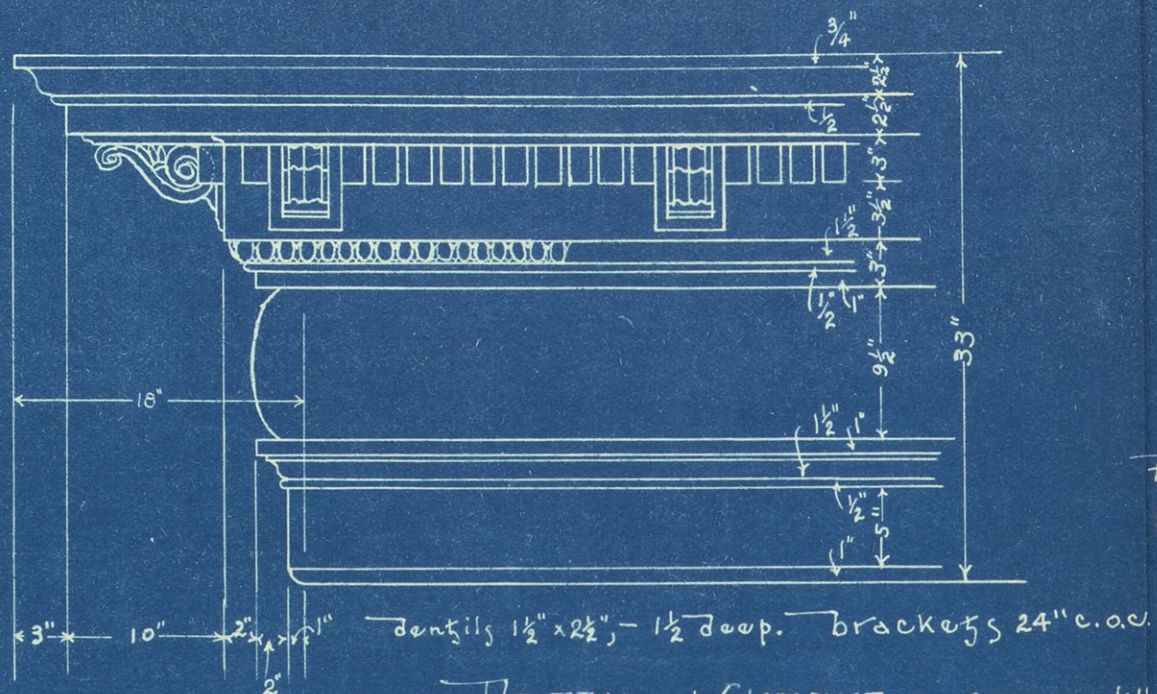
SCALE 1" = 1'

DETAIL OF WINDOW

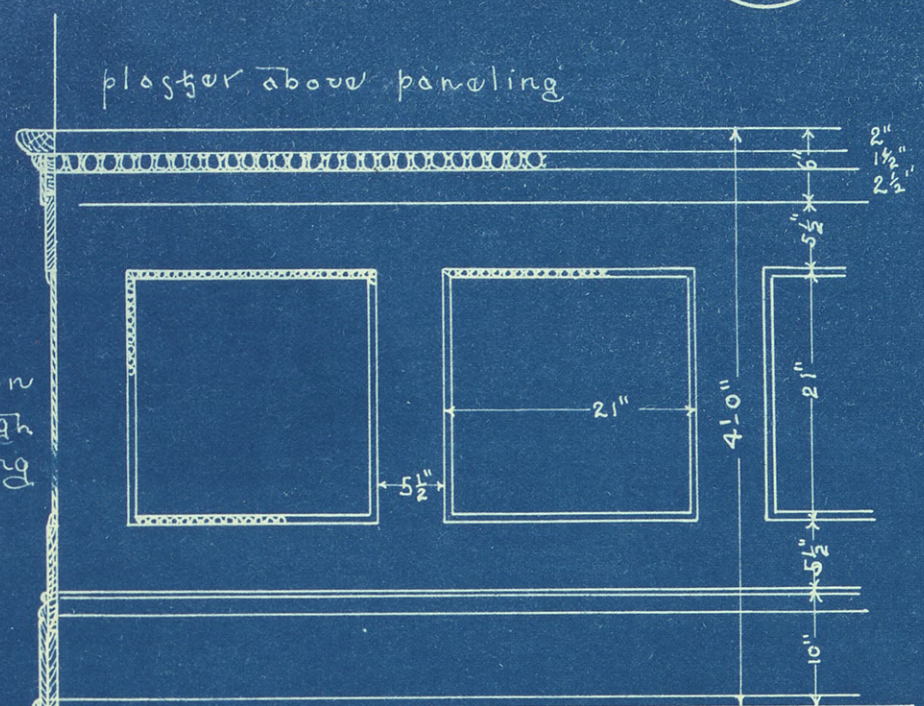
SCALE 3/4" = 1'



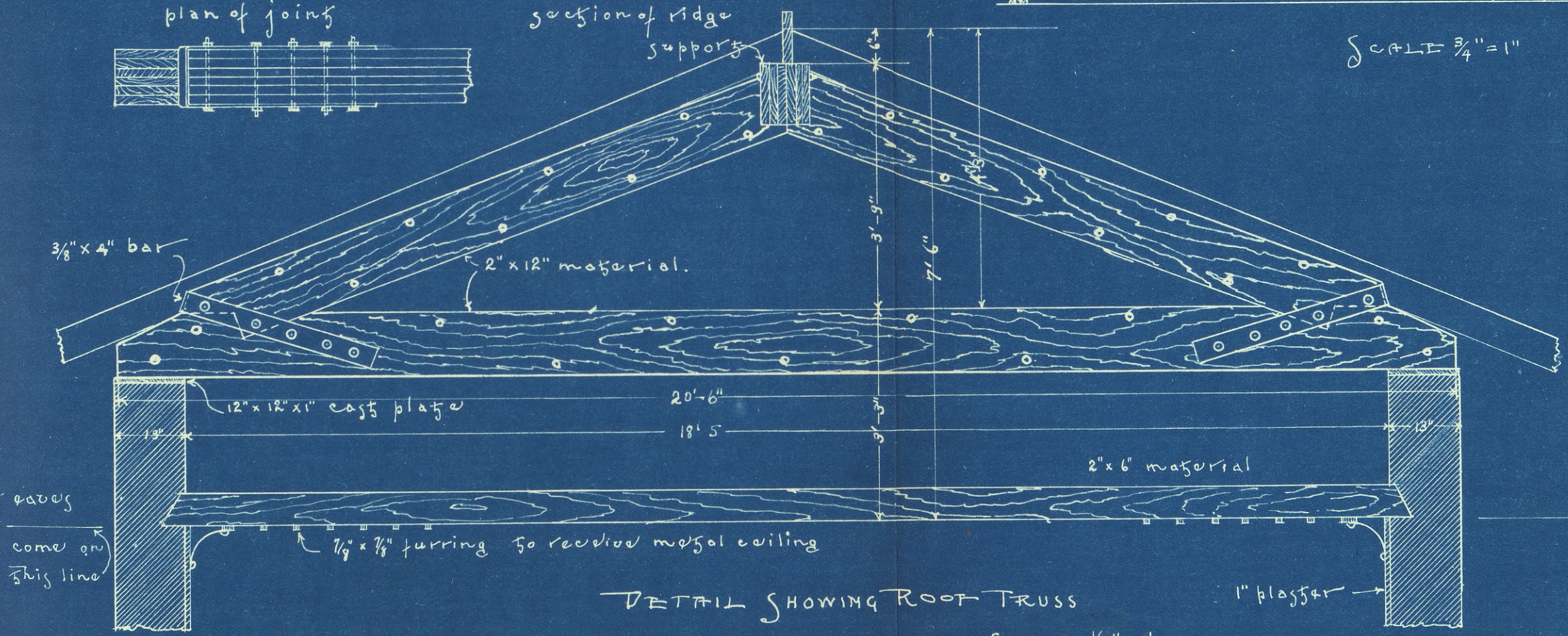
WINDOW DETAILS
scale $\frac{3}{4}'' = 1''$



DETAIL of CORNICE SCALE $\frac{1}{2}" = 1'$

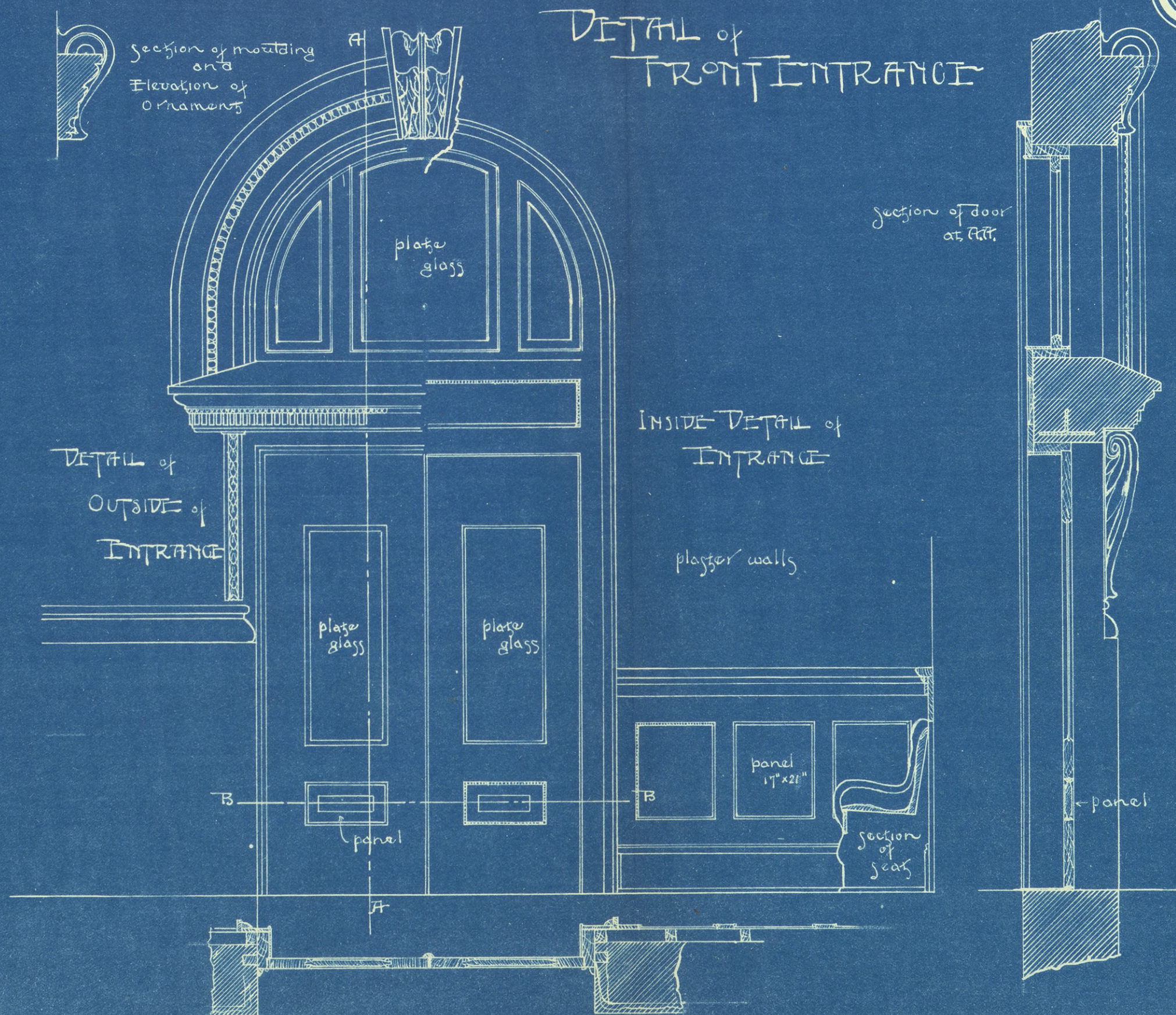


SCALE $\frac{3}{4}" = 1'$

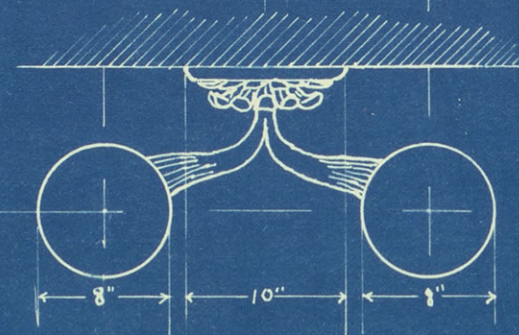
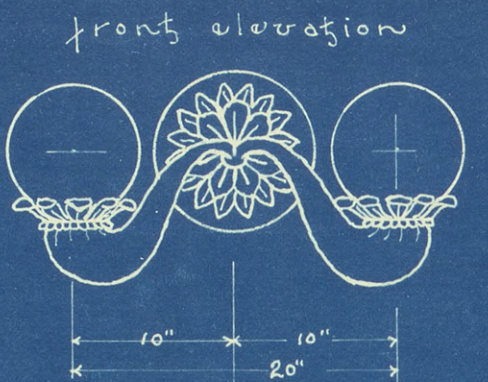
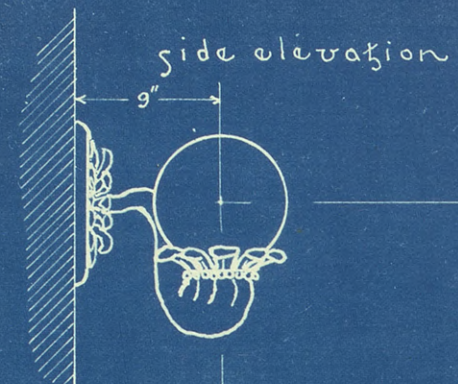


DETAIL SHOWING ROOF TRUSS

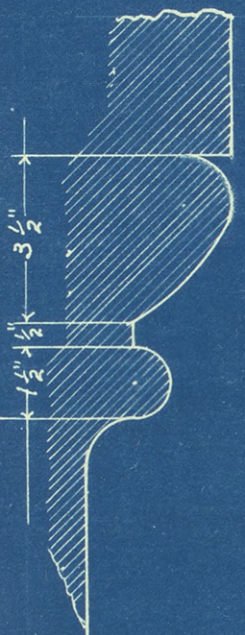
SCALE $\frac{1}{2}" = 1'$



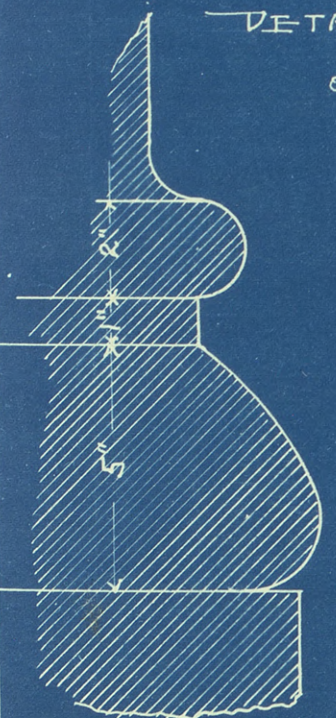
SCALE 1/2" = 1'



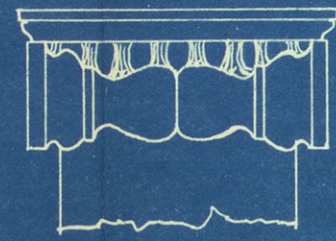
plan of lamp
DETAIL OF LAMP
SCALE 1"=1'



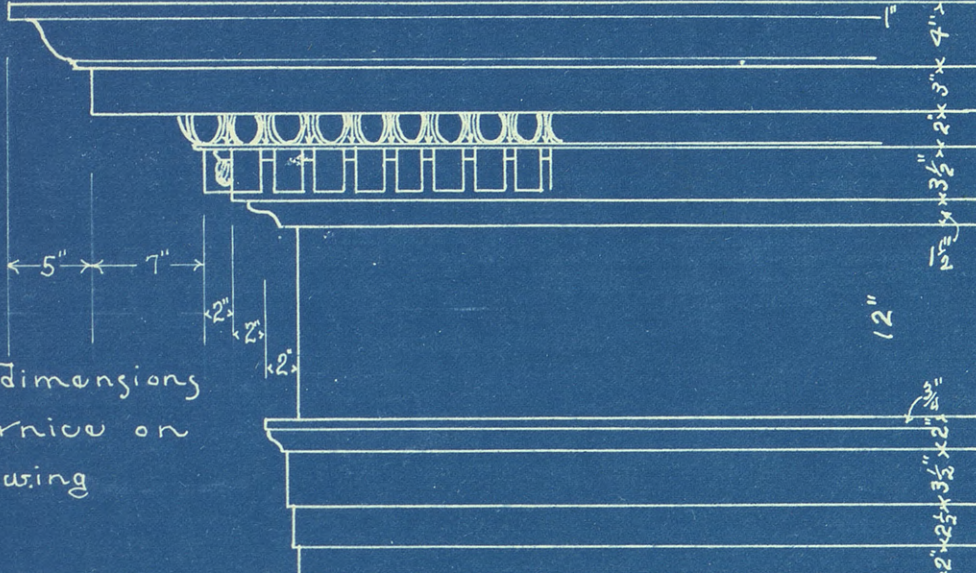
DETAIL OF MOULDINGS
ON EXTERIOR OF FRONT
1/4 FULL SIZE



These dimensions
for cornice on
front wing

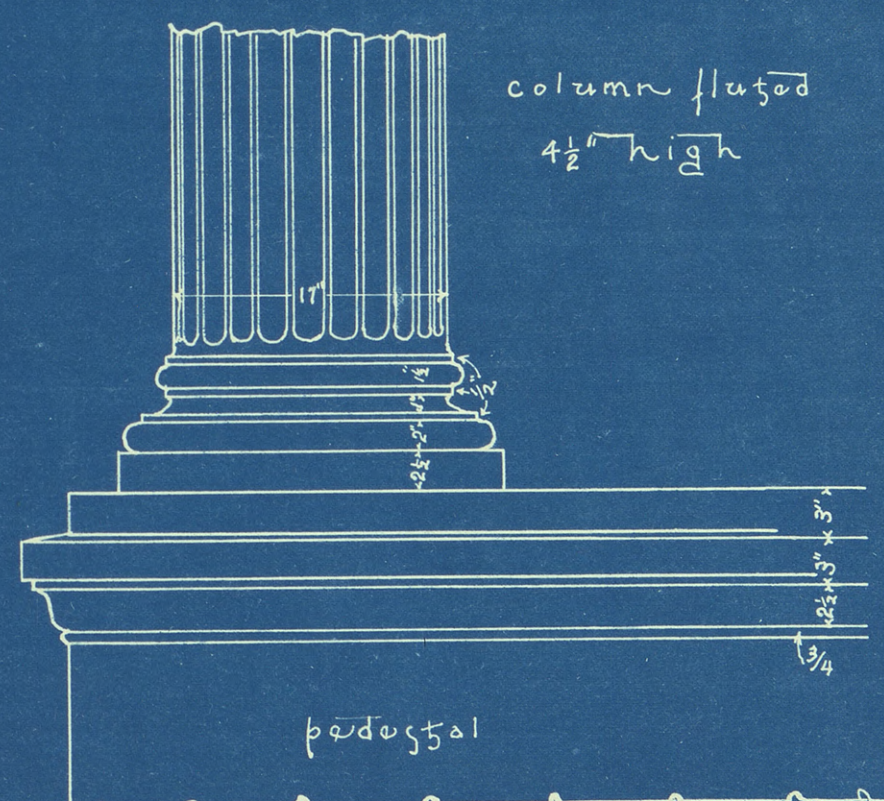


side elevation of
capital



14

DETAIL OF COLUMN
CAPITAL AND
PEDISTAL
SCALE 1"=1'



column fluted
4 1/2" high

pedestal