

JUNE '07

THESIS

PLANS AND SPECIFICATIONS
FOR A
VETERINARY SCIENCE BUILDING

AT THE

KANSAS STATE AGRICULTURAL COLLEGE

BY

Harry E. Porter

STUDENT IN COURSE OF ARCHITECTURE

CLASS OF 1907.

S P E C I F I C A T I O N S
O F
MATERIAL AND LABOR REQUIRED FOR THE ERECTION AND COMPLETION
O F
A VETERINARY SCIENCE BUILDING, TO BE LOCATED AT
THE AGRICULTURAL COLLEGE, MANHATTAN,
KANSAS, ACCORDING TO THE
SPECIFICATIONS
AND
ACCOMPANYING DRAWINGS BY HARRY E. PORTER,
ARCHITECT,
MANHATTAN, KANSAS.

F O R M O F B I D .

~~Contractor~~ offering proposals for the construction of the new Veterinary Science Building at the Agricultural College, Manhattan, Kans., will use the following form of bid.

Honorable Board of Regents,

Kansas State A. C.

Gentlemen:

I will build your Veterinary Science Building according to the plans and specifications, prepared for the same by Harry E. Porter, and will complete and deliver the same on or before.....1908, for the sum of \$.....

I will substitute Asbestos "Century" Shingles for slate shingles, for which I shall deduct \$.....

(Signed) _____

GENERAL CONDITIONS.

This contract covers the erection and completion of a Veterinary Science building for the Kansas State Agricultural College, at Manhattan, Kans. It includes the furnishing of all materials and labor necessary for the erection and completion of the building, though every item involved may not be specially mentioned in the specifications.

The heating, plumbing and electrical work will be done by the College. The contractor must in no way hinder this work and is expected to take reasonable care of it.

The specifications and drawings are part and parcel of the contract and are to be construed according to their full intent, meaning and spirit, whether taken separately or together. The drawings and specifications taken conjointly shall be considered as explaining each other, and descriptive of the necessary work to be performed under the contract.

Should there be any discrepancy or disagreement between the drawings and specifications or between the larger and smaller scale drawings or between the figures and the scale, the wording of the specifications shall take precedence in all cases. The figuring on the drawings shall be taken in preference to the scale, and the larger scale drawings to be taken in preference to the smaller scale drawings. Should anything be shown in the drawings and not described in the specifications, or the converse thereof, the work shall be fully executed and carried out as if drawn, shown, or described in both.

All materials must be of the very best of their kind specified; all workmanship must be thorough and workmanlike; all work

and material must in every respect comply with the building laws and regulations.

The building is to be delivered by the contractor in a finished, clean and undamaged condition on or before the date set in the contract. The contractor shall be subject to a forfeiture of Ten (10) Dollars for every day after the date of completion set in the bid, until the building is delivered; unless the delay is caused by unavoidable circumstances, of which the architect shall be the judge of the sufficiency of the ~~cause~~ for delay and his judgment shall be final.

BOARD OF REGENTS.

The Board of Regents reserve the right to alter the designs without invalidating the contract. In case of any difference in cost due to such change, the amount is to be in proportion to the cost of the entire building. Should the contractor and the Board of Regents be unable to agree on the difference in cost, the matter ~~will~~ be referred to the architect whose decision shall be final.

THE CONTRACTOR.

The Board of Regents will establish the South west corner of the building and the level of the water table. The contractor will be held responsible for the correctness of all other measurements.

The contractor shall protect all work from any damage, whatsoever. He shall be held liable for any damage to the building from fire, water, wind, falling walls, settlement of soil, falling of scaffolds and every other cause. He will also be held responsible for any damage done to life, limb or property

on account of any of the foregoing causes.

The contractor shall obtain all permits that ~~small~~ be necessary, and is to pay all proper fees for the same.

Imperfect work, such as settlements, shrinking etc., of any description, resulting from the use of materials and workmanship, poorer than those specified, or from a deviation from the construction as set forth by the plans, without authority, and occurring within three months after the building has been completed, shall be made good by the contractor at his own cost.

All material and labor of whatsoever kind employed in the building is subject to the approval and acceptance of the architect.

It is assumed that the contractor is a skilled mechanic in all the main departments of building, and fully competent to take charge and direct all parts of the work. It is required that thoroughly skilled man who has technical knowledge of the plans and methods of workmanship, be kept constantly on the work to receive instructions and give directions to the men.

SUB - CONTRACTORS.

Sub-contractors will not be reconized by the Board of Regents, and if sub-contracts are let, the contractor will be held as fully responsible for the work as though he had done it himself.

ARCHITECT'S DUTIES.

In the technical matters pertaining to the contract, the Board of Regents will be represented by the architect, Harry E. Porter, who will superintend the erection of the building, make monthly estimates of the materials and labor furnished by the

contractor, interpret the meaning of the drawings, and specifications, furnish detail drawings, and inspect workmanship and materials. He will have the right to pass judgment on the sufficiency of all designs and materials, and shall reject any work or materials that in his judgment do not fill the requirements of the contract. He shall have full power to order any work, not properly executed, to be taken down and rebuilt and he shall have the power to order the immediate removal of any rejected materials, and these orders must be obeyed by the contractor, and proper materials must be furnished as soon as possible to replace those removed. He shall have full power to discharge any incompetent workman or workmen.

Oversight of the architect to discover inadequate material or workmanship, shall not excuse the contractor from the liability for poor work done. The contractor shall be held liable until the building is completed and accepted.

In case any controversy or misunderstanding between the Board of Regents and the contractor, the architect shall pass judgment upon it, and his judgment shall be accepted as final by both parties.

The architect shall at all times have access to the building, and the contractor must arrange all materials as to facilitate inspection.

In case the architect cannot be on the grounds at all times to superintend the construction, a capable superintendent will be furnished by the Board of Regents and he shall have all the power herein vested with the architect.

PAYMENTS.

The Board of Regents will arrange for monthly payments to ^(to) the contractor, amounting to Eighty (80) per cent of the furnished labor and materials. The amount of these payments shall be estimated by the architect. These payments shall not be construed as an acceptance of any part of the labor or materials furnished, the contractor being held responsible with regard to all the conditions of the contract until the job is accepted by the Board of Regents.

The Board of Regents will not make final settlement, nor accept the building until satisfactory proof can be given by the contractor that all debts contracted by him in the construction of this building, have been paid in full.

EXCAVATIONS AND TRENCHES.

Excavate as shown in the drawings making the basement floors perfectly level.

All trenches are to be made level at the bottom, and full width everywhere. The walls must not touch the earth at the sides by three inches. The sides of the earth trenches where necessary, will be prevented from caving by board casings with strong stakes.

PACKING AND GRADING.

When the walls are dry, fill in the trench and pack well to prevent water from getting into the walls, and grade around the building to the extent of the earth taken out.

CONCRETE FOOTINGS.

All cross and contour walls shall have concrete footing courses, 14" thick and six inches wider than the wall on each

side of the wall. The concrete shall consist of a mixture of one part of fresh, dry, Portland cement; to three parts of course, clean river sand; to five parts of broken stone, such as will pass through a $2\frac{1}{2}$ " ring, screened clear of any earthy matter. Tamp well until water rises to the surface.

FOUNDATION WALLS.

None but the best grade of lime stone is to be used in this building. The foundation walls below the lowest grade line are to be of first class rubble work, laid in strong cement mortar, as specified below. Above the footing course, a layer of headers running clean through the wall and having a surface of not less than 4 sq. ft. must be laid. At intervals of every five feet laterally and every two feet vertically, strong headers are to be laid. The common practice of filling the wall with spalls thrown in by the handful will not be tolerated.

CONTOUR WALLS - RANGE WORK.

Above the rubble work, the contour walls are to consist of range work, of the kind known as "Shoddy-cut" range, the ranges not less than 15" high, until the water table is reached. The water table is 22" high, beveled 3" wide at an angle of 60 degrees. No stones in the water table are to be less than 6' long. Wherever the water table forms the cap of a window, it is to reach equally distant on both sides, beyond the jambs, and to be bush hammered on the under side.

The contour walls are 21" wide, being drawn into 18" at the top of the water table. Above the water table, the contour walls shall consist of first class, "Shoddy-cut" range work of which the ranges shall be less than 6" high or more than 12"

high, the lower ranges being 12" for six ranges, then they may be gradually diminished in height to 6", at the top of the building. No stones are to be less than 18" long, and all ranges must be perfectly horizontal.

CROSS WALLS.

All cross walls are to be 18" wide, consisting of the same kind of rubble work as specified for foundations.

MORTAR.

Below the water table, all walls are to be laid in rich cement mortar, not poorer than one part of fresh Kansas Portland cement to four parts of course, clean, river sand. The sand and cement must be measured in a carefully constructed box, not with shovel. No lime shall be used in this mortar. Above the water table, lime mortar may be used, composed of one part of fresh burned quick lime to five parts of clean, course, sharp, river sand.

POINTING.

All joints in the range work are to be "raised pointed" in the best Portland cement mortar, consisting of one part of cement to two parts of sand, whitened with lime. All beads are to be strictly vertical or horizontal. Use straight edge for drawing the lines. Show as little mortar as possible. Clean all walls with steel brush. No drill or hammer marks will be tolerated.

JAMBS.

All jambs are to be bush hammered on side toward the frame, with no draft on the edge.

WINDOW SILLS.

The top of the window sills is $2\frac{1}{2}$ ft. above the top of the

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floor joists, sills to be 6" high and at least 9" wide. The lugs of the sills are to be bush hammered, and have a slant of 1" (see detail).

TRANSOM SILLS.

The transom sills are to be 6" high, with bottom and lug bush hammered and must extend to right and left flush with the window arch. (see elevations)

COPING.

The coping along the roof shall consist of a range of 6" stone with rough pitched face and bush hammered top and back. (Ir) It will project 4" in front as show in the detail, and be flush with the inside of the wall. Stones to be 6' long.

VAULT.

The walls of the vault are to be built of newburned or vitrified brick, laid in cement mortar. The inside walls are to be 4 brick thick, and those lining stone walls are to be 2 brick thick. (see floor plan)

The vault will be roofed with a concrete segment arch like that over the entry, the arch starting at the height of 7 feet. Continue the vault walls to the second floor joists, and fill in the entire space above the arch with coal cinders.

The side walls of the vault will be anchored with 6 pieces $\frac{3}{4}$ " round iron anchors. Furnish the vault with two steel doors of No....., and set them to the satisfaction of the architect. The space within the foundation walls of the vault will be filled with tamped earth.

The floor of the vault will be of cement concrete, mixed and made the same as that specified for the basement floors.

CONCRETE WORK.

After the completion of the stone work of the building, provide a first class concrete floor in the basement and the dissecting room, also provide concrete arches over the vault and entry, and a concrete floor in the vault and entry.

The cement floors are to be built of a stratum of coal cinders, and a stratum of concrete, each 3" thick, the concrete consisting of one part of fresh Portland cement, to three parts of course clean river sand, to five parts of either Joplin grit. Over this lay a top coat consisting of one part cement to 2 parts of sand. (same kind as above). The top coat must be spread over the foundation stratum within three hours, and must be trowelled down hard. Lay the floors in separate squares as may be directed by the architect. This work must be positively satisfactory. No slovenly work will be accepted.

Lay the entry floor with Mosaic tile work as shown in the detail of the entry, the pattern being similar to sample furnished by the architect and containing the inscription shown in floor plan.

VENTILATER FLUES.

The ventilater flues are to be built as shown in the plans, and plaster the stone flues as they are carried up. Build the small flues of 2 X 4 studs, covered with lath and plaster, and line the inside with galvanized iron, all other flues are to be plastered on the inside. Provide each flue with 12" X 12" openings, covered with suitable cast iron register plate, where openings are shown in the floor plans.

CRAMPS.

All walls where headers are not easily placed are to be held together by iron cramps made of $\frac{1}{4}$ " X 1" X 18" iron. The ends of these cramps are to be bent at right angles, the outside one $\frac{1}{2}$ ", the inside one 1". Cramp all walls under the ends of every sill, transom sill and cap.

PARTITION BOLTS.

The end stud of every partition terminating against the wall is to be bolted securely by two $5/8$ " bolts 12" long, laid in the wall.

ROOF ANCHORS.

Anchor the wall plates every 4' feet with well made $5/8$ " X 3' anchors of usual construction.

ANCHORS.

All girders and every alternate floor joist must be solidly anchored to the walls. All this timbering rests on stone wall seats which must be true and even.

WALL PLATES.

The floor joists of the first and second floors will rest directly on the stone wall which is to be leveled with and by large flat stones. The attic floor will rest on 2" X 6" wall plates, bedded in the wall true and even. There must be full sized floor joists next to the wall, in all cases, with anchors or lugs securely built into the walls.

BACK LINTELS.

The windows in the dissecting room shall have back lintels, consisting of 3 - 2 X 10" pieces spiked securely together. The basement windows will have back lintels (cast iron) as shown in

detail drawings. The arched windows will have strong inside arches of brick or rough cut stone quions.

DRILL HOLES.

No drill holes are to be seen in the face of any stone.

THE ROOF.

The roof is to covered with first grade 10" Bangor slate shingles, laid 4" to the weather, on 10" board sheathing. The sheathing is to be laid close, having three nails in each board at each rafter and is to be covered with heavy roofing felt.

The rafters are to be 2" X 8", supported by purlins as shown in the Sectional "elevation". Make the hip rafters of 2" X 10" pieces above 18 X 20' long, with joints broken at proper intervals. Anchor the hip rafters of the dissecting room with ordinary anchors of $\frac{3}{4}$ " iron rods, about 6' long. Also place similar anchors between the windows of the dissecting room.

The lower purlins are to consist of double 3" X 14" pieces, 20' long, bolted together by $\frac{1}{2}$ " bolts, placed zig zag every $2\frac{1}{2}$ ". Joints are to broken at proper intervals. These purlins will be supported by 4" X 4" posts or 2-2 X 6" spiked together strongly, and at the corners by 6" X 8" beams running to the cross walls as indicated in the Roof Plan by dot and dash lines.

LUMBER.

All rough lumber except the sheathing, is to be of best grade of yellow Pine, free from large knots, sap splits or any other defects. The joists studs and rafters are to be of No. A., surfaced on one side and edge, no 2" material will be accepted that does not measure over 1 $\frac{5}{8}$ ", when perfectly dry, nor any 3" material, that does not measure over $2\frac{1}{2}$ " when perfectly

dry. All 14" joists must measure $13\frac{1}{2}$ " when perfectly dry. All interior finish lumber is to be of first class white oak.

DIMENSIONS.

Floor joists.....	3" X 14"
Lower purlins.....	3" X 14"
Back lintels.....	3" X 14"
Stair beams.....	3" X 14"
Upper purlin.....	2" X 10"
Purlin braces.....	6" X 8"
" supporting posts.....	4" X 4"
Rafters.....	2" X 8"
Hip rafters.....	2" X 10"
Valley rafters.....	2" X 10"
Studs.....	2" X 10"
Wall plates.....	2" X 10"
Rafters and studs of dormers.....	4" X 4"
" in tower.....	2" X 4"

All the flooring joists, partition studs, and rafters are to be placed 16" apart, center from center. The joists must be cross bridged every 8 feet. Double all joists where they form headers and also under the partition walls.

SHEATHING.

The roof and floors are to be sheathed with $7/8$ " X 10" boards of good grade of lumber, laid close at right angles to the timbers and nailed with 3 - 8 p. nails, in each timber crossed.

PAPER.

Cover all floors and roofs with extra heavy tar felt of ap-

proved quality.

FLOORS.

Lay the finish of the first and second stories with one thickness of extra heavy tar felt paper, and over this lay a first class, narrow, vertical grained, perfectly dry, white oak flooring. These floors must be kept positively clean of all stains. Plane all floors after laying and drench them with a good coat of boiled linseed oil.

The attic floor shall be constructed of first class 5" star pine flooring.

The basement floors are to be of cement as specified under "concrete work". The basement and attic floors will be kept clean from trash, mortar, etc.

WINDOW FRAMES AND WINDOWS.

All the windows will be 1 $\frac{3}{4}$ " lip rail sash windows, complete with box frames as shown in detail, hung with cast iron weights, cord and pulleys, and glassed with a good grade of double strength American glass, sizes of window shown in "Elevation". The glass in the Toilet room is to be Florentine glass.

The window frames will be shown as in the detail, the outside parts being of Fir, Cypress or White Pine, and the inside finish of first class white oak.

GENERAL DIRECTIONS CONCERNING FRAMES.

The window and door frames will be primed all over as soon as built. The pulley stiles are to have a coat of linseed oil. The frames will be kept safely stored from the weather. Great care must be exercised to keep the frames true and even while being walled in. The tops of the frames are to be housed with

tar paper during exposure to weather.

At the end of the job all glass will be thoroughly cleaned and turned over ready for use; all broken glass fully restored.

The sash will be evenly fitted after all parts are seasoned, after the plaster is thoroughly dry and all conditions perfect. The sash must run smoothly and easily, and both the stiles and edges of the sash treated with oil and rubbed until the sash will remain in a satisfactory condition.

STAIRS.

The main stairs will be mortised stairs on 3" X 14" or 2" X 12" beams as shown in the "Sectional Elevation". They shall have 7/8" white oak risers, and 2" X 12" treads with rounded nosings and 1/2" cove moulds. The treads will be of positively sound and dry ash or white oak.

The attic stairs will be boxed in by a 2" X 6" studding wall and have a 3' X 7' oak veneered door at the foot of the stairs. These stairs may be made of first class white pine, otherwise the same as above. The ballusters of white oak like designs shown in detail drawings.

INSIDE FINISH.

All inside finish is to be of white oak. The jambs will be square. The design of casing base boards and caps are shown in detail drawings.

All halls, stairways and laboratories are to be wainscoted to the height of 4 feet, with narrow beaded 5/8" white oak, having cap, base board and chair mould as shown in detail. The class rooms will be wainscoted with the same material to a height flush with the window benches, capped with a chalk rail

as shown in detail.

TEACHER'S PLATFORMS.

The teacher's platforms will be built on 5' X 6' frames, built at 2" X 6" joists. Cover with extra narrow oak flooring. Provide the three visible edges with the half round 1" X 2" oak nosing. The platforms to be movable, and must be fitted to the baseboards of the wainscoting.

PLASTERING.

The store room and the locker room of the basement floor will not be plastered. All other parts of the three full stories will be plastered with three coats in first class fresco finish. It is intended to fresco the walls and ceiling with water paint, but this is not included in the contract.

The mortar will be prepared according to the directions furnished with the plaster, and the ratio of the sand must not be increased. All first coat work to have the standard mixture of fibre, provided in the manufacture; and all first coat lath work to have added two bushels to 100 yards of plastering, of long, neat, soaked and separated hair, thoroughly mixed with the mortar. A flushing coat or floating coat must then be applied. The finish coat is to be of the so called "sand finish" except in the blackboard strips. The blackboard strips are to be finished to a height of $4\frac{1}{2}$ " feet above the chalk rail, with a heavy coat of agatite, well trowelled down, and perfectly smooth.

All plastering will be full to the floor, and it must come well behind the door and window casings.

All lath will be best quality of dry white pine laid not

less than $3/8$ " open joint.

REMOVE TRASH.

The plasterer will remove all plasterer's trash from the premises and clean by washing, if necessary, all portions of finish daubed by the mortar.

FURRING.

All contour walls shall be furred with 1" X 2" boards fastened 16" from center to center, to wedges tightly driven into the mortar at intervals of about $3\frac{1}{2}$ feet.

Where there is no furring, lay a 1" X 3" strip in the wall to hold the wainscoting. Where there is furring nail a 1" X 3" to furring to hold wainscoting. (see detail)

CEILING.

Finish the dissecting room walls to ceiling with first class $5/8$ " beaded, narrow, ceiling boards laid diagonally on furring pieces and rafters. This is to be painted as specified under "Painting".

GUTTERS & ETC.

The gutters in the main part of the building are to be lined with 20 oz. copper, 42" wide, as shown in detail.

All valleys are to be lined with 20 oz. copper, 28" wide. Furnish 20 oz. copper ridge and hip rails to all ridges and hips.

The cornice on the dissecting room to be made according to detail, of 20 oz. copper.

LEADERS.

Place leaders where shown in the roof plan. All leaders are to be 4" corrugated iron and to be connected at the water line or table with 4" cast iron pipes which will connect with

and the tile sewer pipe below ground.

PAINTING.

The interior of the dissecting room is to be primed with a coat of boiled linseed oil containing enough yellow ochre to make it hold well. It is then to be covered with two coats of white enamel paint. Paint mixed of pure white lead and ochre of such color as the superintendent may select.

Paint all wood cornices, window and door frames, etc., with three good coats of Sherwin & William's all oil paint. Paint the outside of all window sashes with three good coats of same paint. Paint the leaders with two good coats of stone colored paint and sand the surface after each coat. All colors to be selected by the superintendent.

Varish all inside oak finish in one coat of white filler and two coats of coach varnish, liberally applied.

Putty all nail holes and cracks, cover all knots with dissolved shellac, sand paper and clean properly; keep all door hardware free from varnish. Do a good, clean job, generally.

DOOR & WINDOW HARDWARE.

The contractor will furnish the door and window hardware, which is to be selected by the architect or Board of Regents, at a cost not exceeding the following.

Inside doors, not over...	\$2.50	each
Outside doors, " "	10.00	"
Windows " "	.25	"

The door and window hardware, which includes hinges, mortice locks, night latch for front door, spring bolts for double doors, window latches and handles, etc., is to be properly installed by the contractor.

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BLACKBOARDS.

There will be blackboards on all four sides of all class rooms and laboratories, reaching from the chalk bench to a neat top strip, 1" X 3", placed 4' 6" above the chalk bench. The blackboard spaces are to be finished with a coat of Agatite instead of a "sand" finish. Cover this, when dry with two good coats of Andrew's Liquid slating, applied with the brush.

HEATING & PLUMBING.

The heating and plumbing will be done by the College. The building will be heated by a central steam system. The contractor must in no wise hinder this work, and must take proper care of it after it is installed.

ELECTRIC WIRING.

The electric wiring will be done by the College, subject to the same conditions as above.

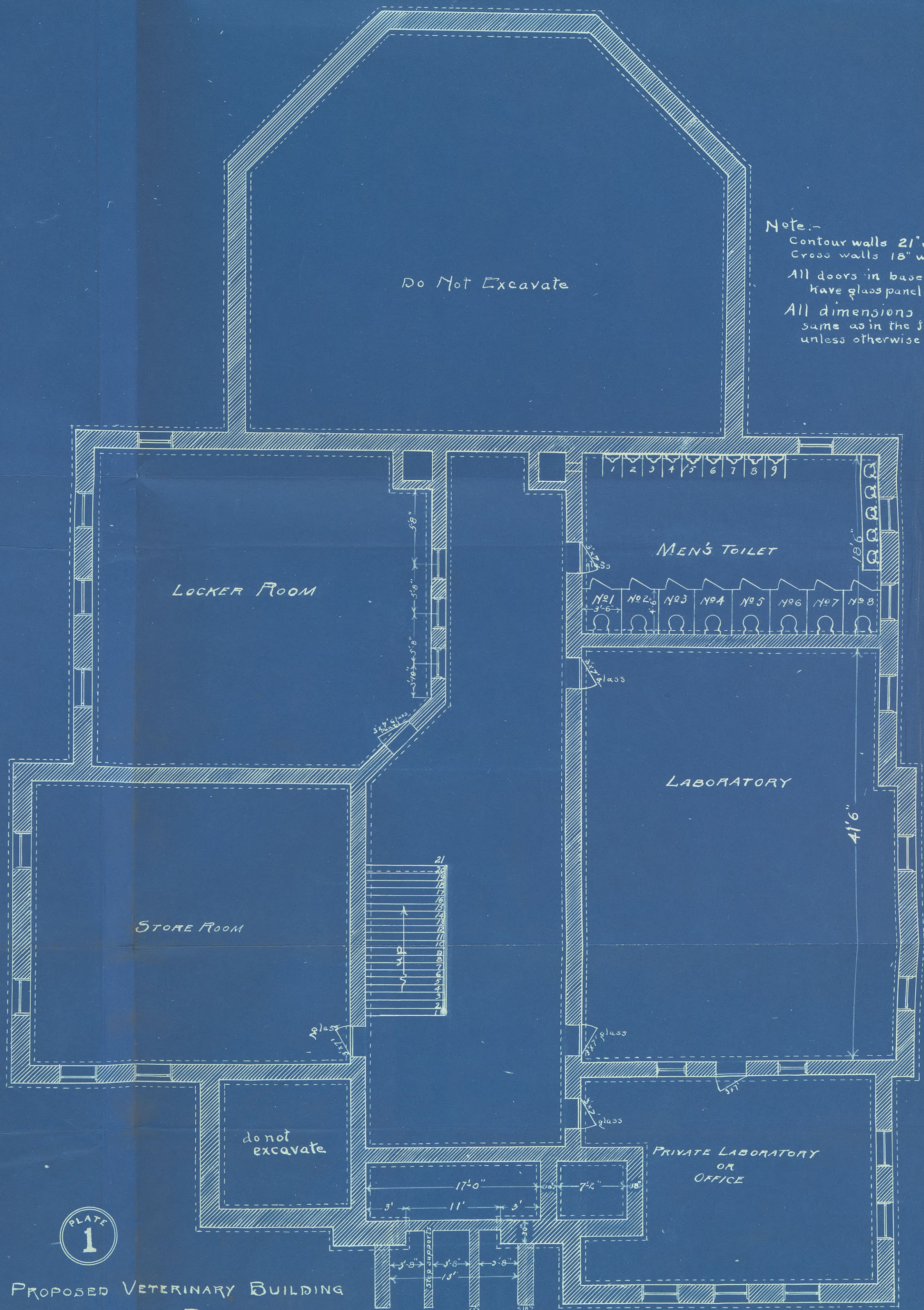


PLATE
 1
 PROPOSED VETERINARY BUILDING
 FOUNDATION PLAN
 Harry E. Porter - Arch.

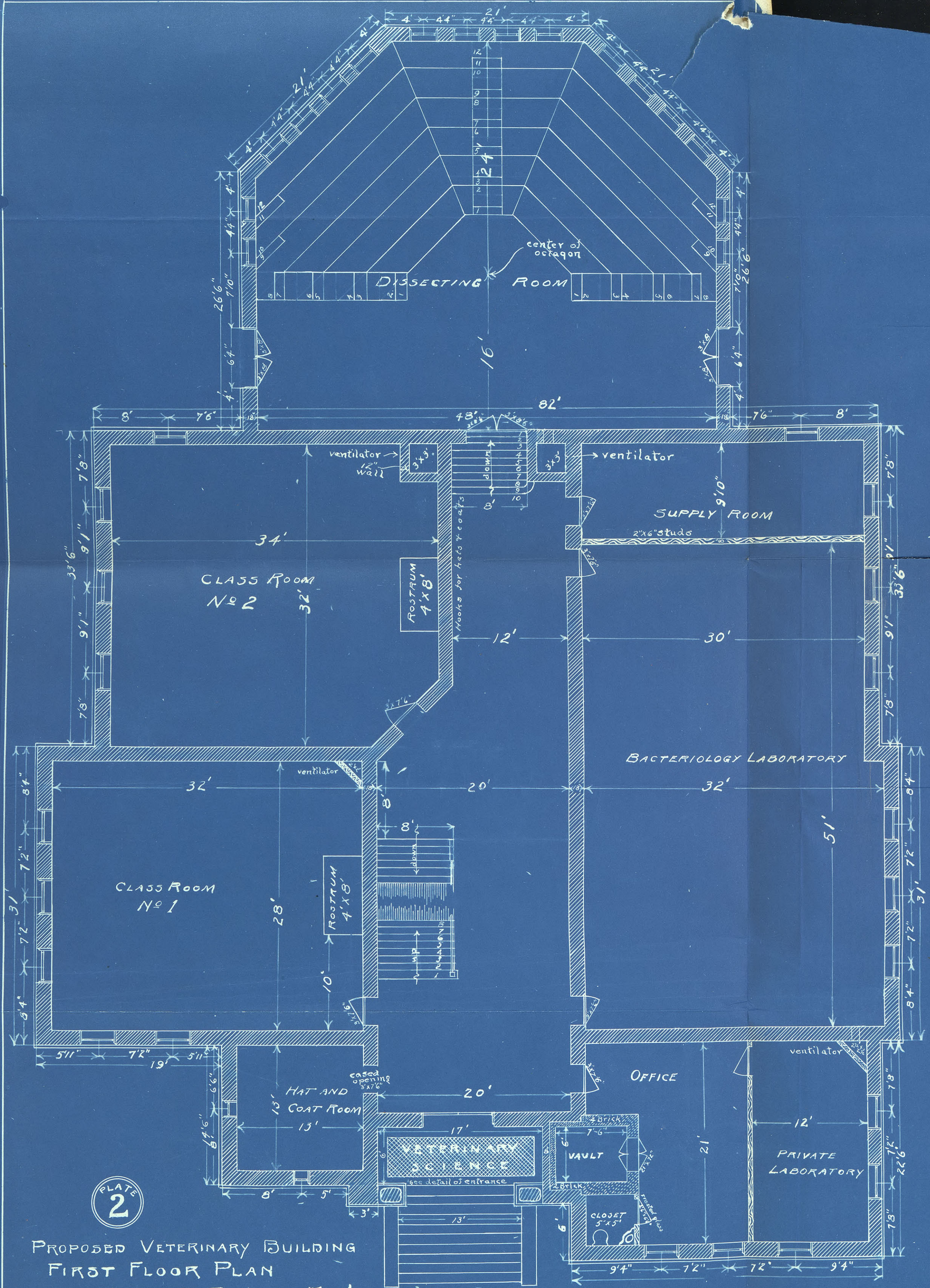


PLATE
2

PROPOSED VETERINARY BUILDING
FIRST FLOOR PLAN
Harry E. Porter - Arch.



PROPOSED VETERINARY BUILDING
SECOND FLOOR PLAN
Harry E. Porter - Arch.

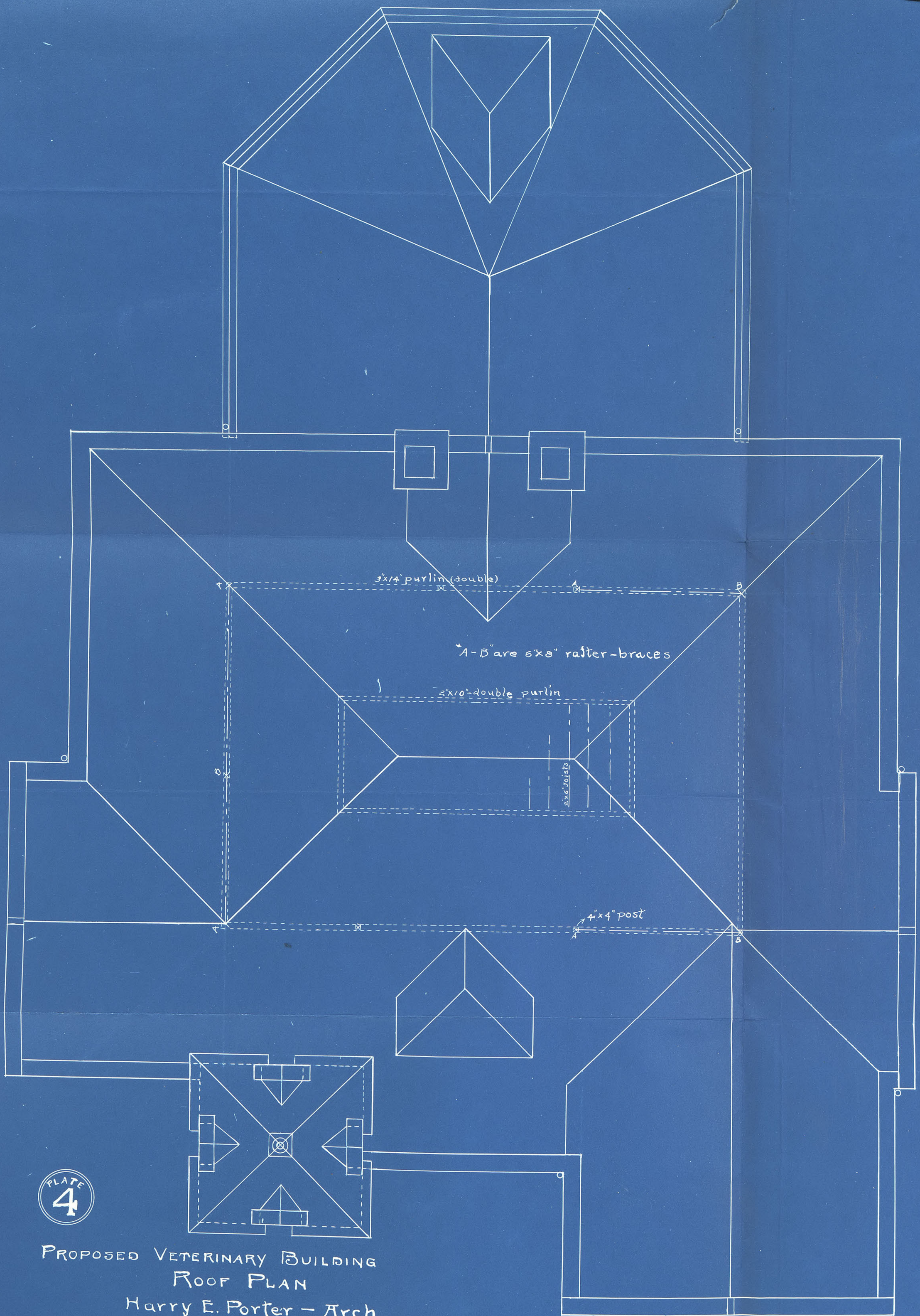
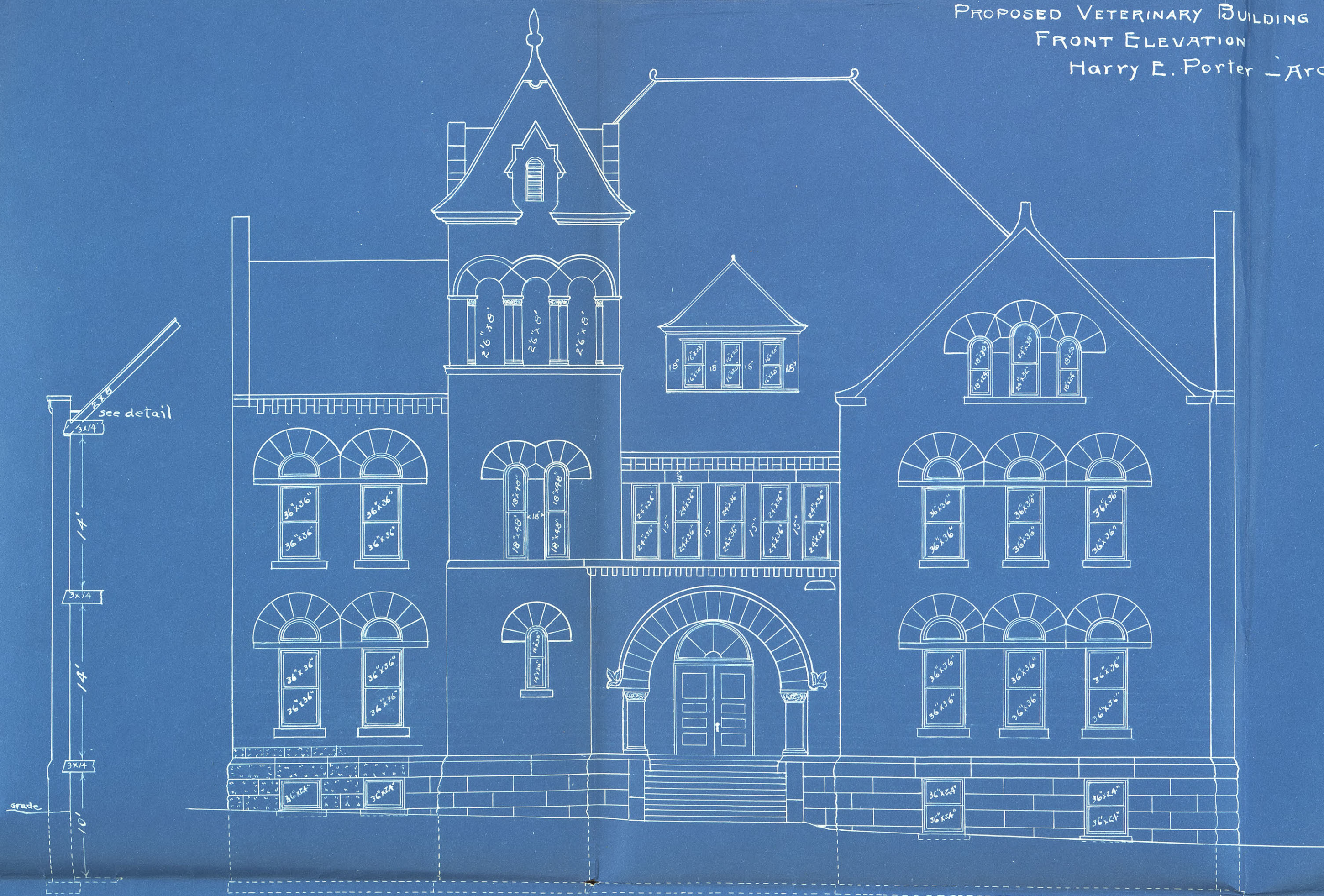
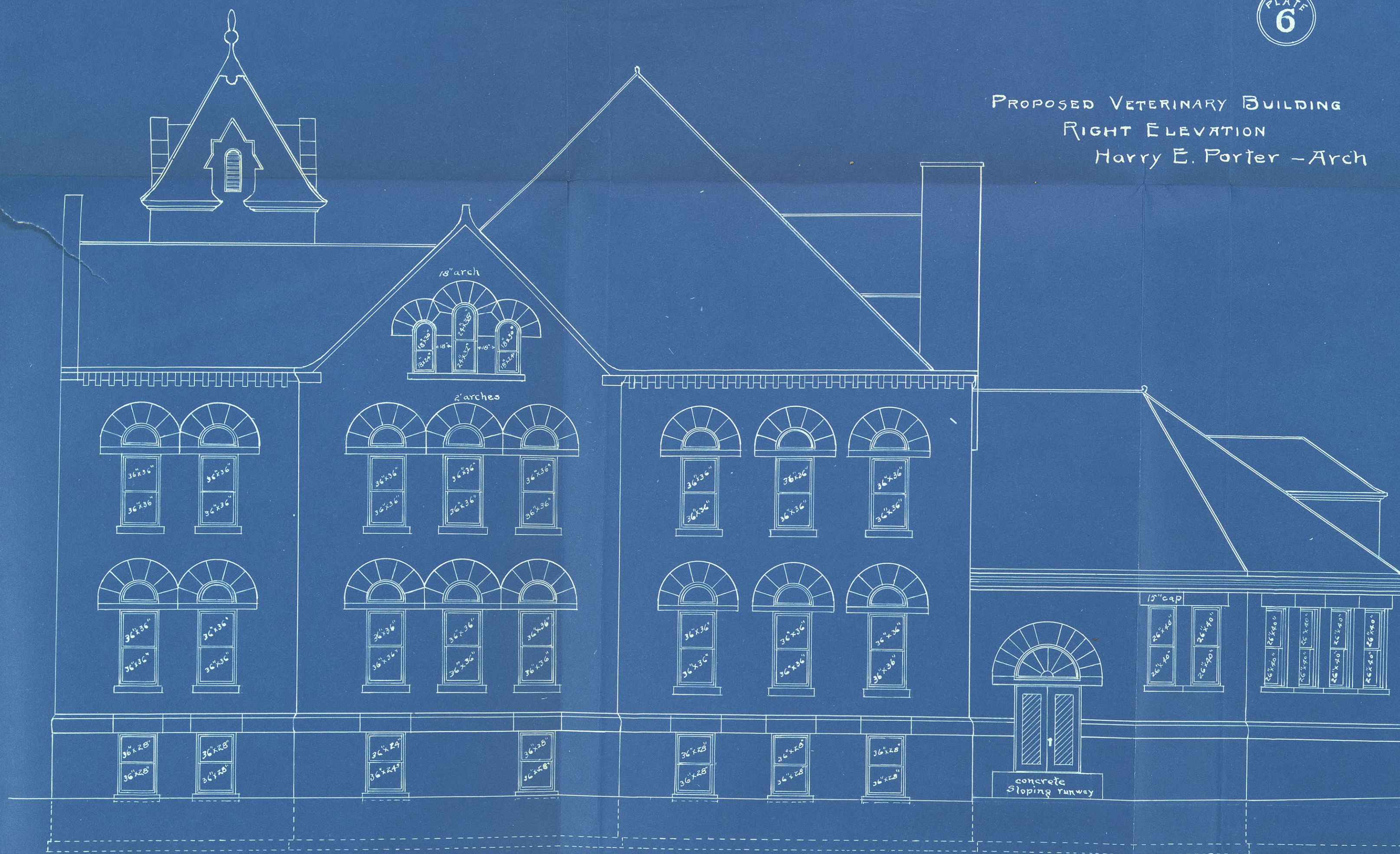


PLATE
4

PROPOSED VETERINARY BUILDING
ROOF PLAN
Harry E. Porter - Arch.



PROPOSED VETERINARY BUILDING
RIGHT ELEVATION
Harry E. Porter - Arch

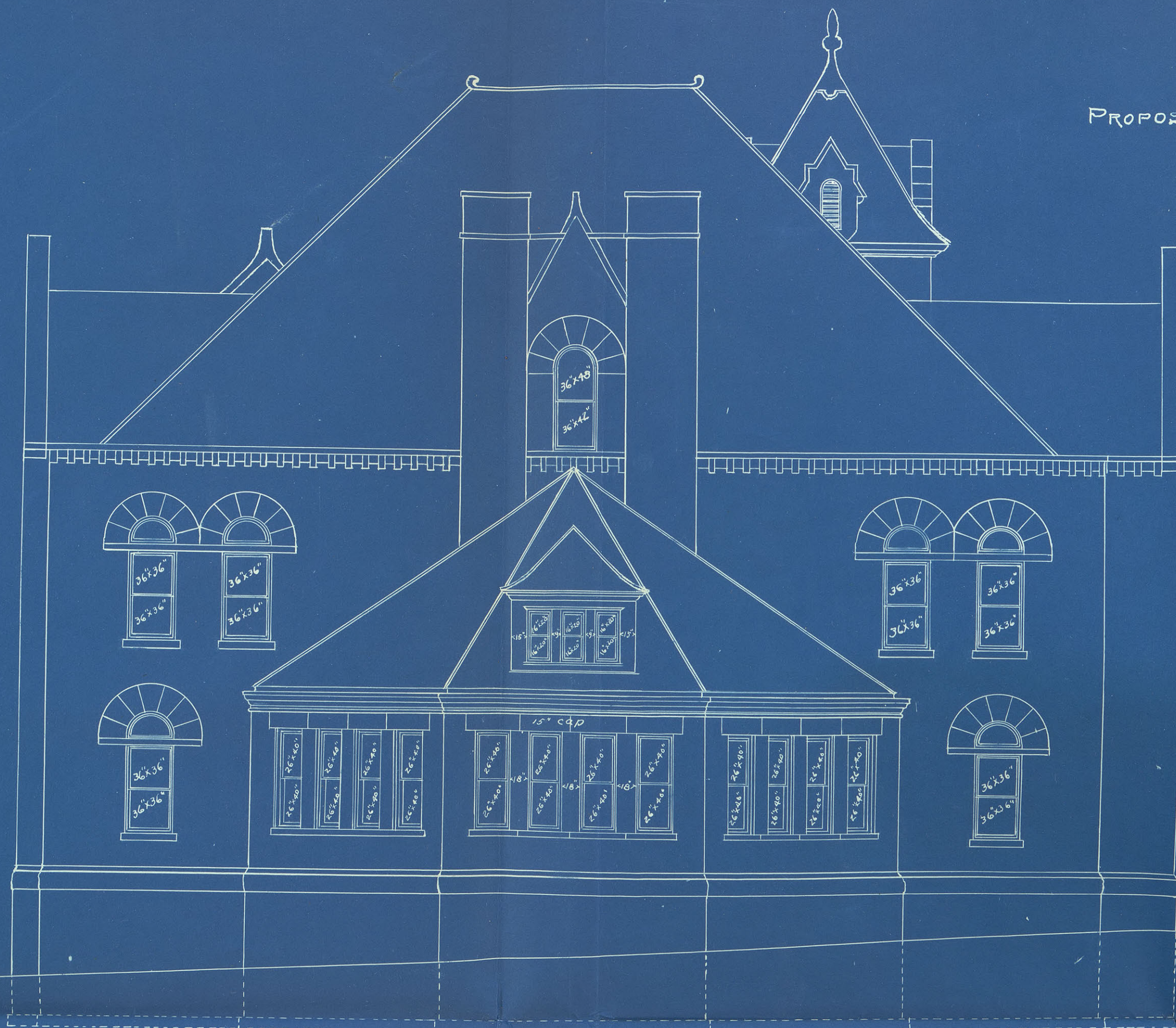


PROPOSED VETERINARY BUILDING
LEFT ELEVATION
Harry E. Porter - Arch.

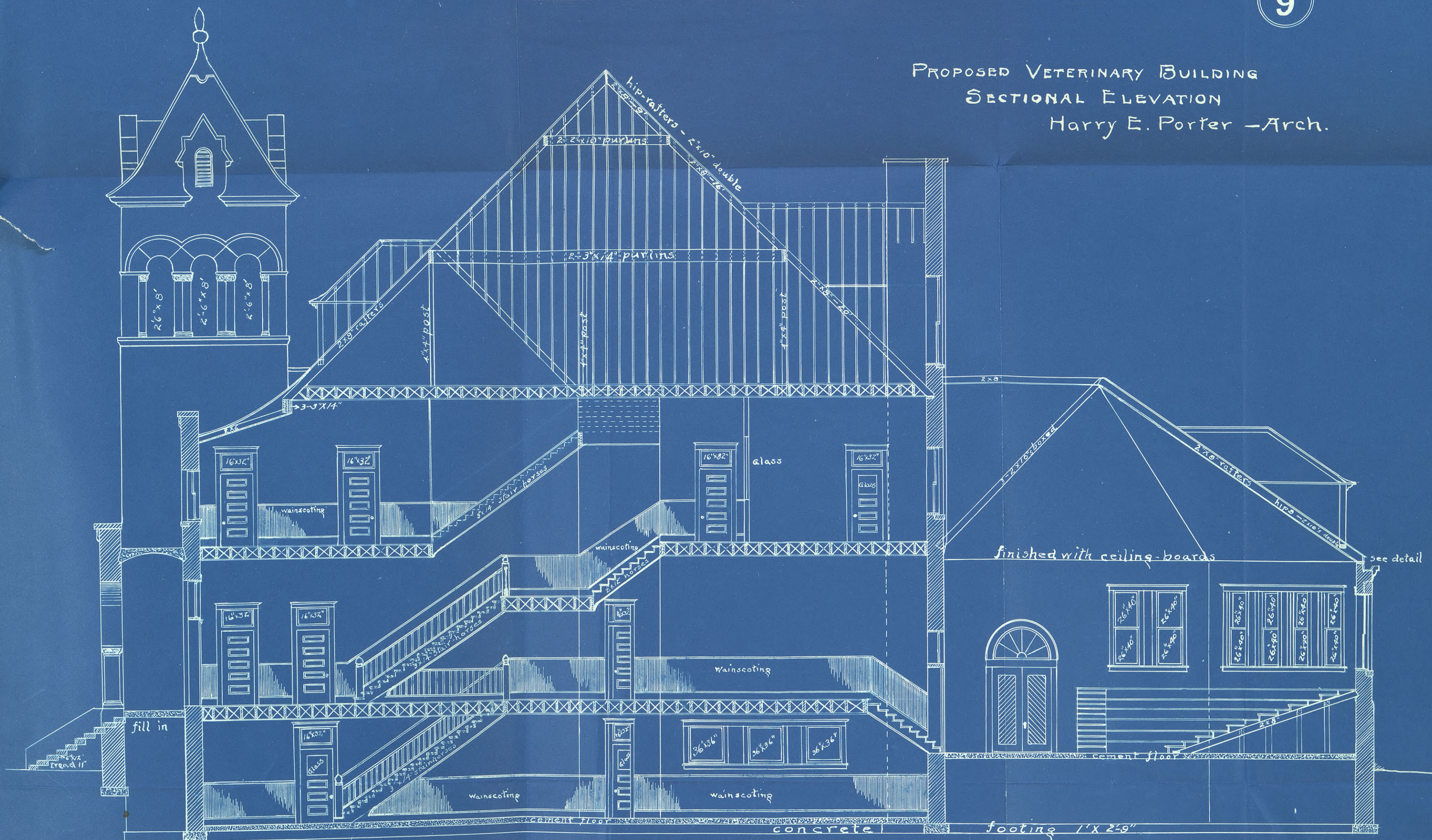
PLATE
7



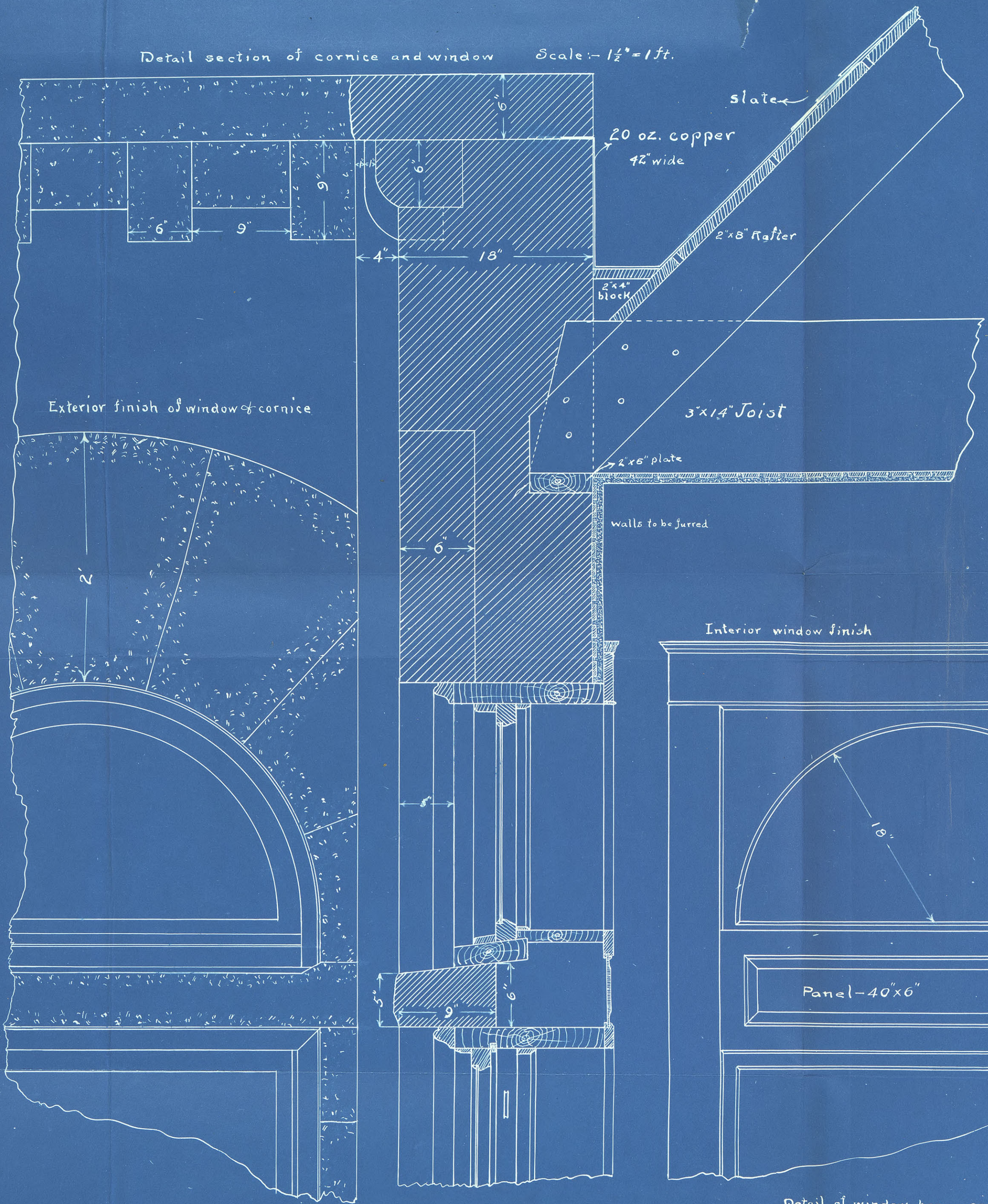
PROPOSED VETERINARY BUILDING
REAR ELEVATION
Harry E. Porter - Arch.



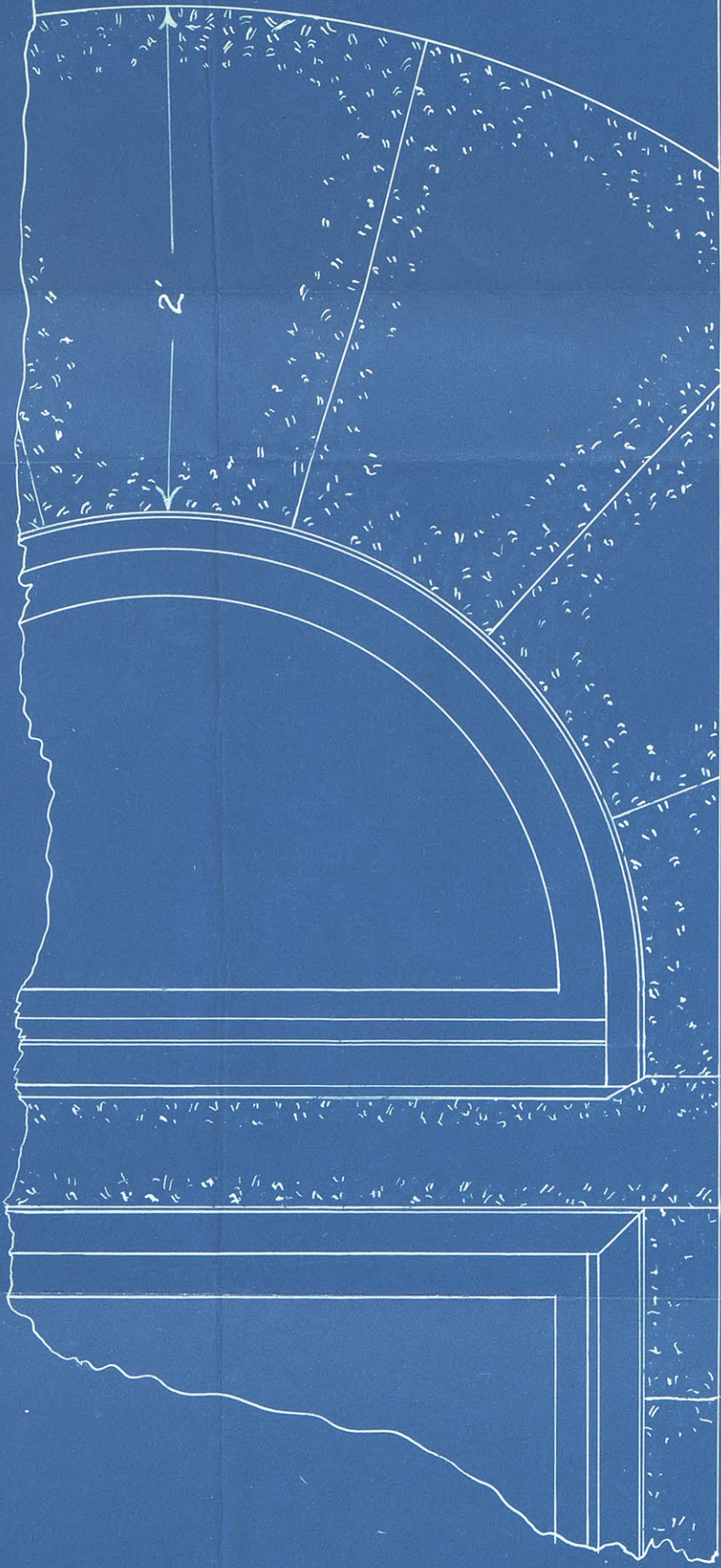
PROPOSED VETERINARY BUILDING
SECTIONAL ELEVATION
Harry E. Porter - Arch.



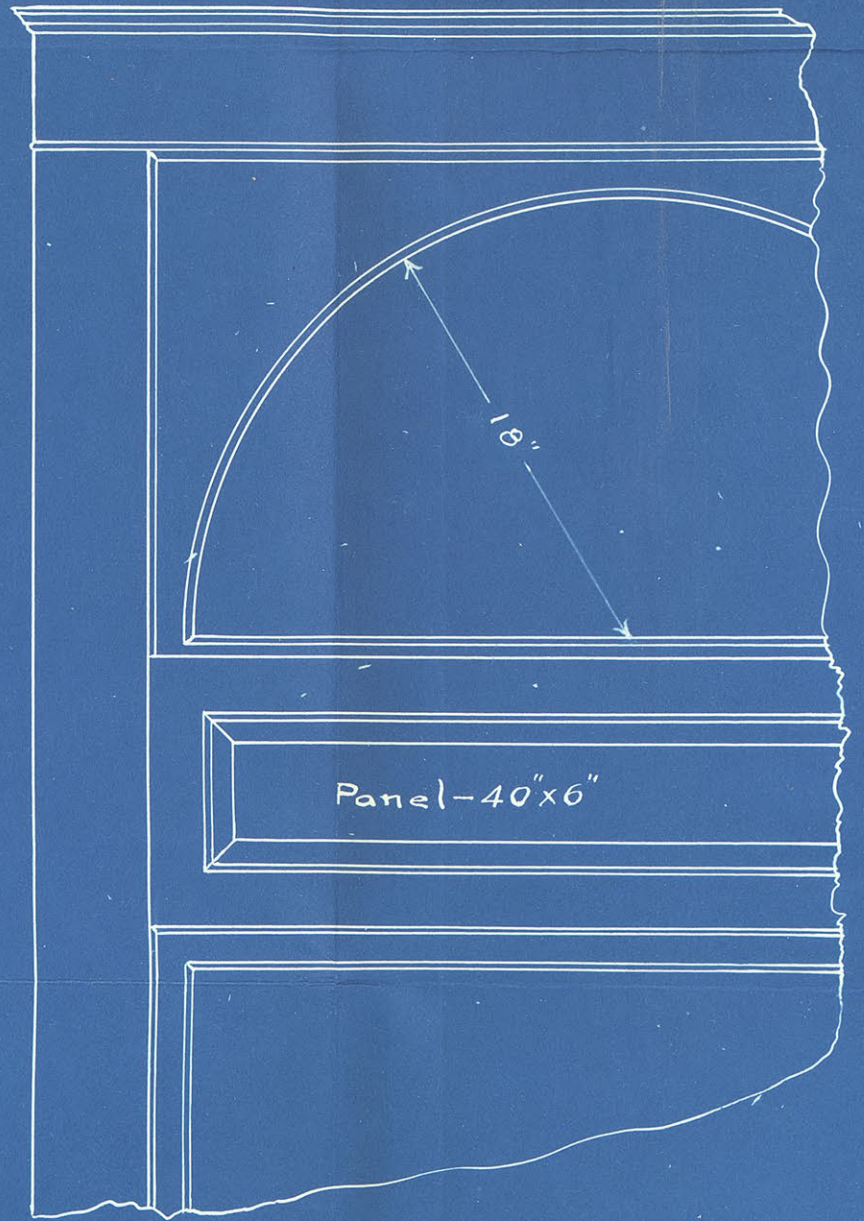
Detail section of cornice and window Scale: $\frac{1}{2}" = 1 \text{ ft.}$



Exterior finish of window & cornice



Interior window finish



Detail of window-box scale: $\frac{1}{2}" = 1"$

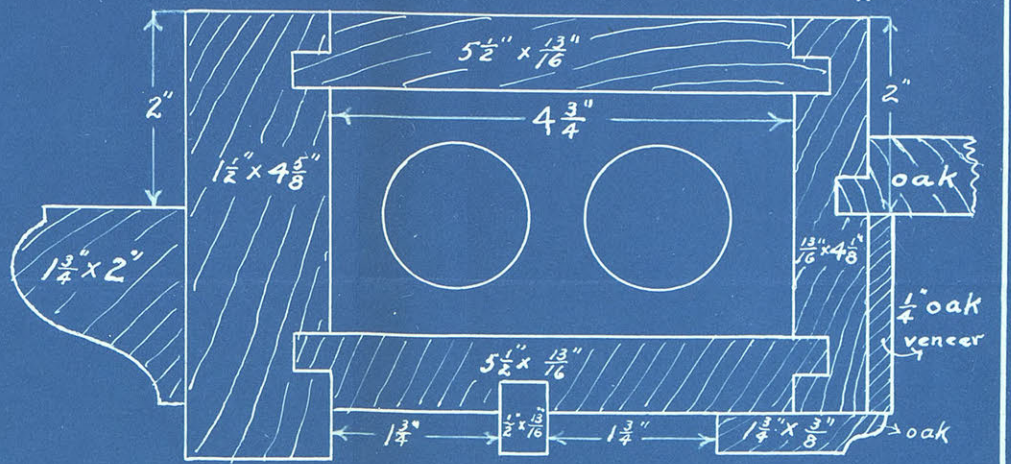
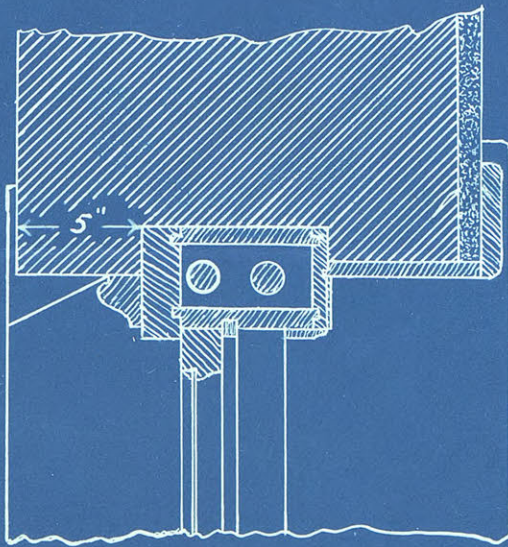
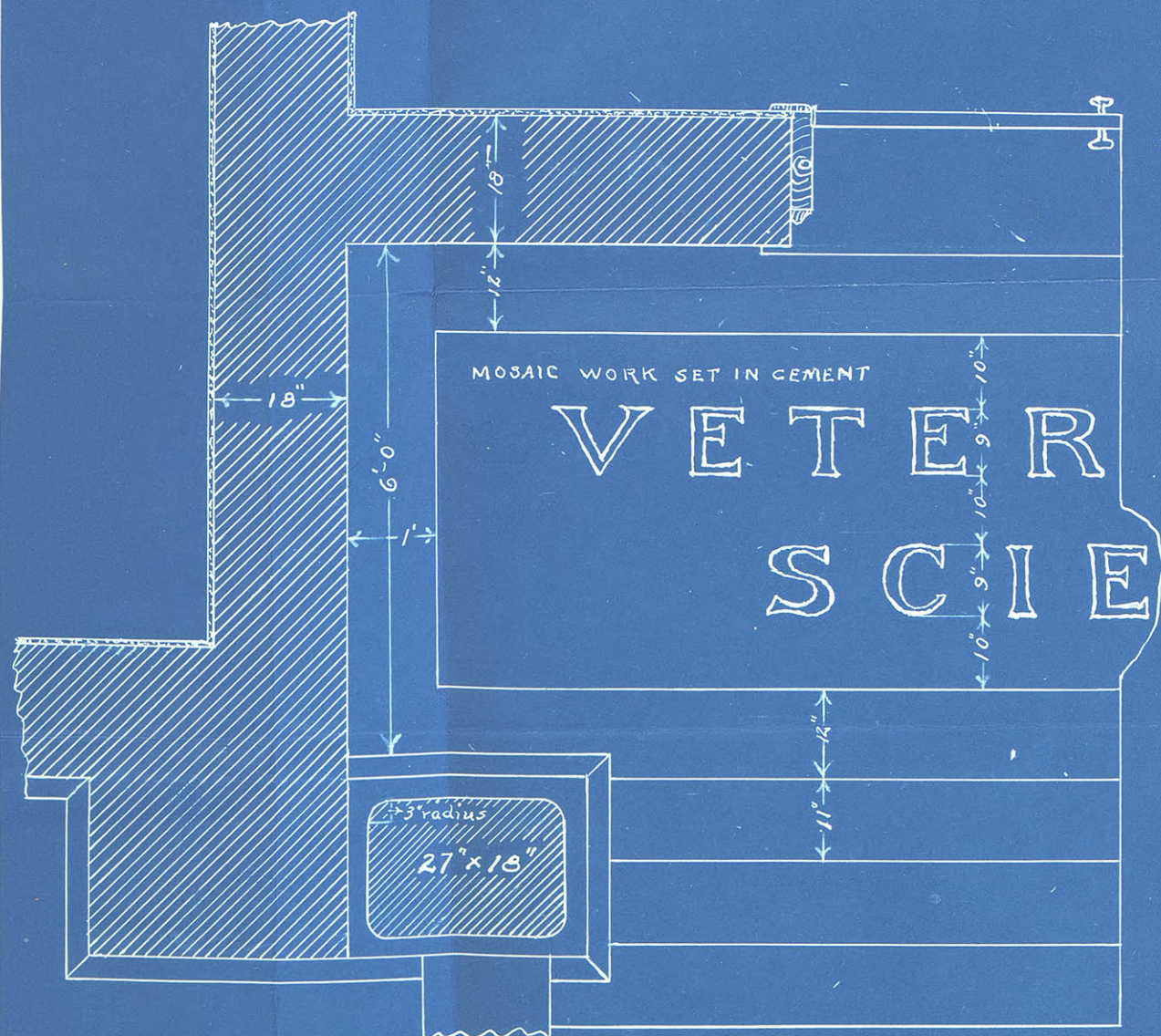


PLATE
10

PROPOSED VETERINARY BUILDING
DETAILS
Harry E. Porter - Arch.



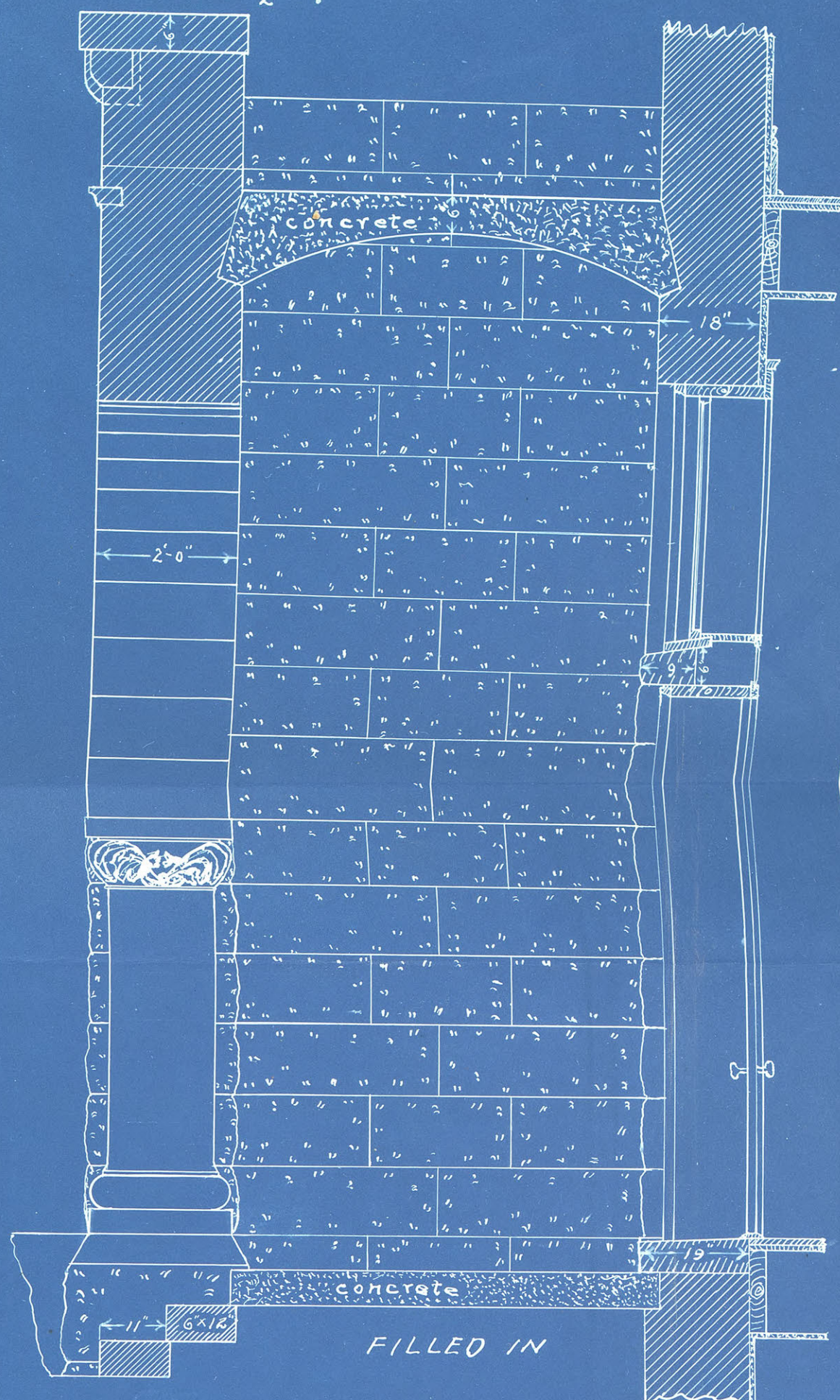
DETAIL of ENTRANCE



VETER
SCIE

27" x 18"

scale $\frac{1}{2}'' = 1'$



FILLED IN

DETAIL OF CAPITAL $\frac{1}{8}'' = 1''$

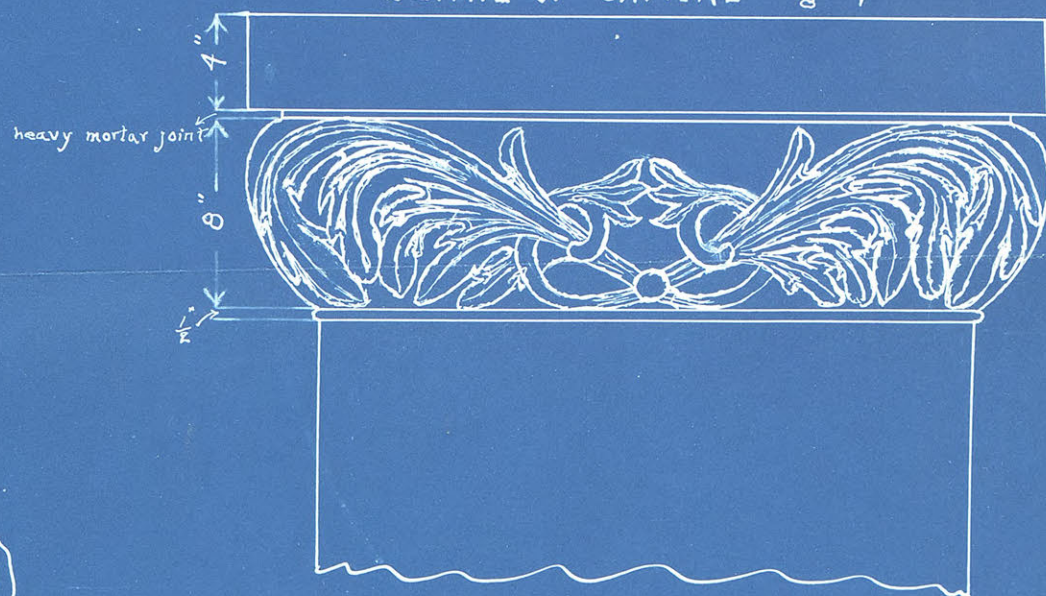
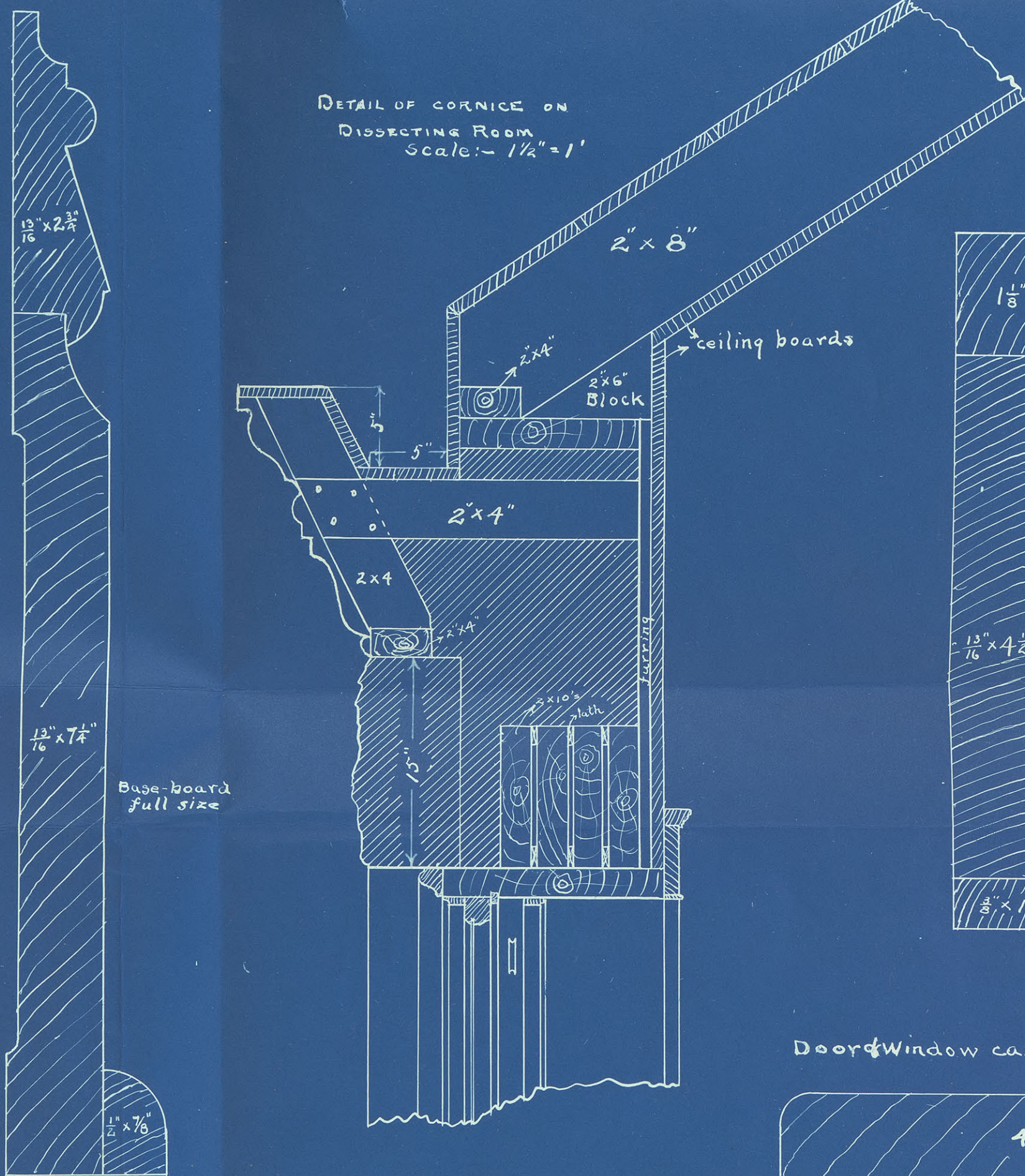


PLATE
11

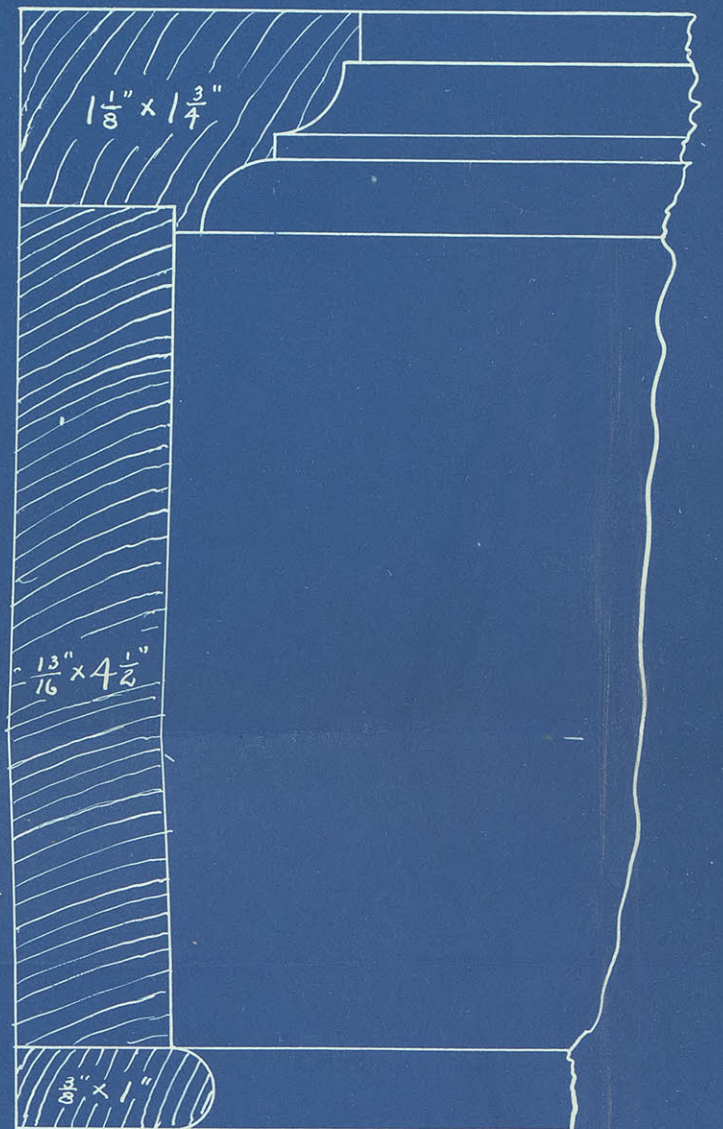
PROPOSED VETERINARY BUILDING

DETAIL OF ENTRANCE
Harry E. Porter - Arch.

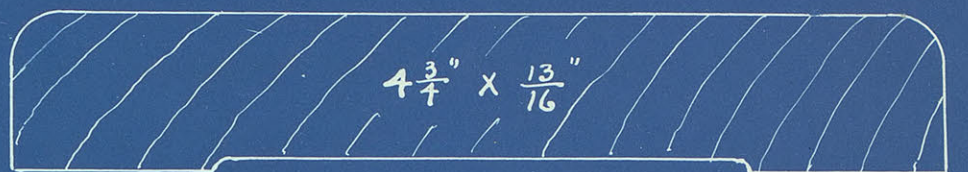
DETAIL OF CORNICE ON
DISSECTING ROOM
Scale: $1\frac{1}{2}" = 1'$



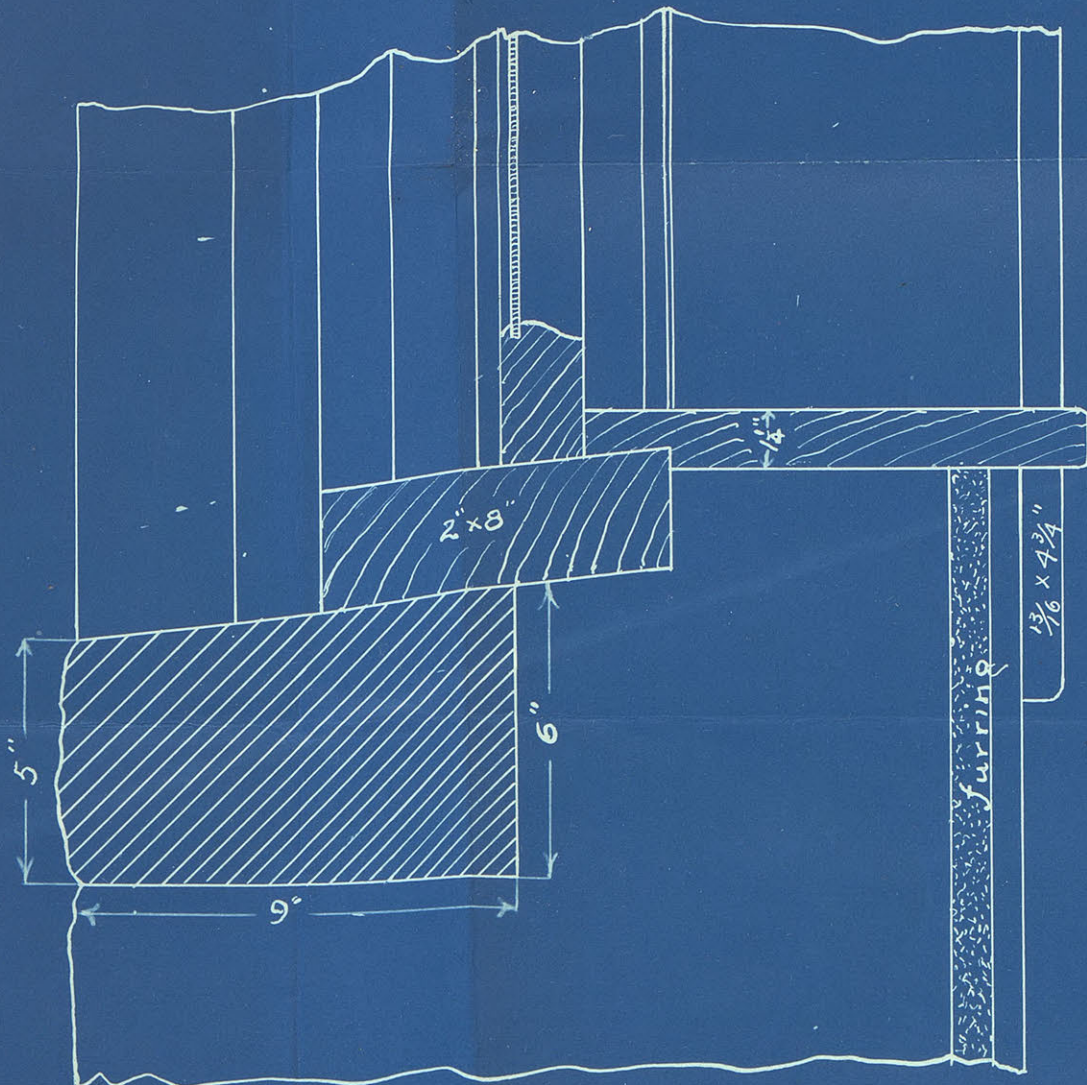
window cap full size



Door & Window casing full size



Window-bench
scale: $3" = 1'$



Chalk rail full size

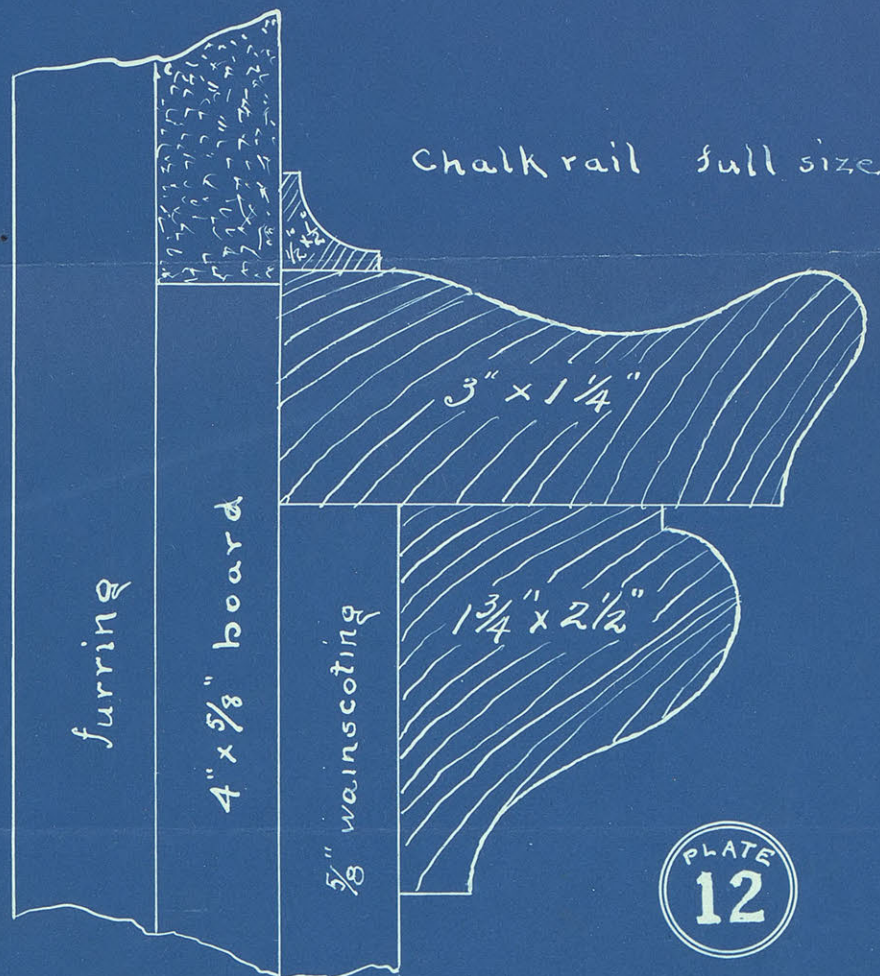


PLATE
12

PROPOSED VETERINARY BUILDING
DETAILS
Harry E. Porter - Arch.

PROPOSED VETERINARY BUILDING
DETAILS
Harry E. Porter - Arch.

PLATE
13

Stair Finish
 $1\frac{1}{2}" = 1'$

Back lintel of
Basement Windows
 $1\frac{1}{2}" = 1'$

Wainscoting cap - full size

$1\frac{1}{8}" \times 2\frac{1}{4}"$

Wainscoting

$5\frac{1}{8}" \times 3"$

$1\frac{1}{8}" \times 2\frac{1}{2}"$

$3"$ $6"$

cast iron

Stair Construction
 $1\frac{1}{2}" = 1'$

ceiling
boards

Hand-rail - Full size

$2\frac{3}{4}" \times 3\frac{3}{4}"$

$2\frac{1}{4}"$

$5" \times 14"$ stair beams
24" from center to center

$2\frac{1}{4}"$ Block

$2\frac{1}{4}"$ Block

$26"$ $8"$

$9"$

construction level

