Approved plans and specifications for post hospitals / Surgeon General's Office.

Contributors

United States. Surgeon-General's Office.
Royal College of Surgeons of England

Publication/Creation

Washington : [G.P.O.], 1877.

CIRCULAR No. 10.

APPROVED PLANS AND SPECIFICATIONS
FOR
POST HOSPITALS.

SURGEON GENERAL'S OFFICE,
Washington, October 20, 1877.

HEADQUARTERS OF THE ARMY,
ADJUTANT GENERAL'S OFFICE,
WASHINGTON, *October* 20, 1877.

GENERAL ORDERS, No. 98.

By direction of the Secretary of War, the following regulations relative to hospitals for the Army are published for the information of all concerned:

1. Regulation Hospitals will be built in accordance with plans this day approved, and, when especially authorized by the Secretary of War, will be erected at permanent posts.

In the construction of a new post the erection of the hospital shall go on *pari passu* with that of storehouses and men's quarters.

2. Provisional Hospitals are such as may be erected at temporary posts.

In future no building shall be erected or occupied for hospital purposes until the opinion of a Medical Officer has been obtained, in writing, as to the merits of the site and arrangement, and if the Commanding Officer dissents from this opinion, he shall return the same to the Medical Officer, with his reasons for dissent indorsed thereon.

3. Requests for the erection of Regulation Hospitals will be made by the Medical Officer, through the Commanding Officer. The location of the building, the proposed material, the exact modifications of the regular plan (if any) which are proposed, and the estimated cost, are to be stated in the request. The Commanding Officer will indorse his opinion upon the request and forward it to Department Headquarters. The Department Commander will obtain the views of the Medical Director and Department Quartermaster, and forward the papers to the War Department, with his own opinion indorsed thereon.

4. When the erection of a hospital has been authorized, the Officer charged with its construction will consult as to minor details with the Medical Officer of the post, who will act as inspector of the work on the part of the Medical Department.

5. When the building is reported ready for occupation, the Medical Officer will report in full, as to its merits, to the Surgeon General, through the Medical Director, and shall furnish a copy of the same to the Constructing Officer.

6. Copies of all plans, estimates, and orders connected with the erection or repair of Post Hospitals, whether temporary or permanent, will be furnished to the Medical Department by the Officer making the same, and when furnished to a Post Surgeon or Medical Director, they will at once forward them, with their comments, to the Surgeon General.

7. The Surgeon General will, in future, furnish to the Quartermaster General, in time for his annual estimates, a statement of the number and size of hospitals, and of the amount of hospital repairs which will probably be required for the ensuing year, with the estimated cost of the same.

8. Medical Officers in charge of Post Hospitals will prepare, on the 1st of May of each year, and forward without delay, through the regular official channels, to the Adjutant General of the Army, detailed estimates of repairs, alterations, or additions required for their respective hospitals during the next fiscal year, or for the erection of new hospital buildings when deemed necessary.

The estimates will be accompanied by such drawings as may be necessary to their full understanding, and will show the kind and cost of the materials and labor to be procured, and to what extent (if any) the work can be performed by the troops.

Where no alterations or repairs are required, that fact will be immediately reported.

For the Department of Dakota these estimates will be forwarded on the 1st of March.

9. The plans and specifications for Post Hospitals, approved this day, will form the basis of action until further orders in regard to this subject.

BY COMMAND OF GENERAL SHERMAN:

(*Signed*) E. D. TOWNSEND,
Adjutant General.

WAR DEPARTMENT,

Washington, D. C., October 20, 1877.

The following plans and specifications for the erection of Post Hospitals are this day approved.

GEO. W. McCRARY,
Secretary of War.

CIRCULAR No. 10.

WAR DEPARTMENT,
SURGEON GENERAL'S OFFICE,
October 20, 1877.

The following plans and specifications, approved *this day* by the Secretary of War, are published for the information of Officers of the Army:

I.—APPROVED PLAN FOR A REGULATION POST HOSPITAL OF 24 BEDS.—PLATES A, B, C, D.

This hospital consists of a central administration building and two wards arranged as wings.

The wing for each ward will be 45 feet 8 inches long, by 25 feet 4 inches wide and 15 feet high in the clear from floor to ceiling. For very cold climates the height may be reduced to 12 feet, in which case the length will be increased to 50 feet.

Attached to each ward, and at the outer end and behind, will be a room for earth-closets, as shown in plans.

The administration building will be 36 feet 4 inches front, by 40 feet 4 inches deep, and two stories high, with a back building 43 feet 8 inches by 15 feet 4 inches. Each story of this building will be 13 feet high from floor to ceiling.

A veranda 10 feet wide will surround the hospital as shown in plans.

In hot climates the wards will be detached from main building, remaining connected with it by the veranda only, which will thus entirely surround the ward. The back building will be separated in like manner.

The plan of the first floor, the designations and dimensions of rooms, and the positions of doors, chimneys, windows, and beds are shown on Plate A; the plan and dimensions of the second floor on Plate B; the front and side elevations of the building on Plate C. The sections are shown on Plate D.

II.—APPROVED PLAN FOR A REGULATION POST HOSPITAL OF 12 BEDS.

Same as number I, except that one ward will be omitted.

III.—APPROVED PLAN FOR A TWO-STORY REGULATION POST HOSPITAL OF 12 BEDS.

Designed especially for malarious regions or for posts where it is desirable *that a ward shall be in the second story.*

This hospital will consist of a building two stories high, 78 feet 10 inches long, 26 feet 4 inches wide, with a veranda 10 feet wide extending entirely around the building.

The arrangement, designation, and dimensions of rooms, and the position of chimneys, doors, windows, and beds are shown on Plates E and F; the front elevation on Plate G; the side elevation and section on Plate H.

IV.—APPROVED PLAN FOR A PROVISIONAL HOSPITAL.

Plate K gives a ground plan for a Provisional Post Hospital of 8 beds, to be constructed of logs, adobe, or lumber, as circumstances may permit.

This plan is given simply as a guide to be followed in cases which admit of no delay and for the use of temporary encampments.

It is supposed that Regulation Hospitals will usually be built of wood, but brick, stone, or other material may be used when deemed more economical.

I AND II.—SPECIFICATION OF LABOR AND MATERIAL TO BE USED IN THE CONSTRUCTION OF A REGULATION POST HOSPITAL OF 24 OR 12 BEDS.—PLATES A, B, C, D.

NOTE.—The plans referred to in the following specifications are also given in working drawings on a scale of ½ inch to one foot respectively, a set of which will be furnished by the Surgeon General when required for actual use.

Excavation.

*The excavation for piers, or trenches for footings, will be dug to sizes specified, made level, and well rammed on the bottom. The earth displaced will be deposited on the ground as may be directed.

Mason Work.

The sills of the building and veranda will be supported on stone or brick piers or timber posts. If stone piers are used, they should be 2 feet by 1 foot 4 inches, built of large flat-bedded stones, laid to break joints. If brick piers, they shall have a stone footing, 2 by 2 feet, and 6 inches thick; and the brick work shall be 18 by 18 inches, of sound, hard-burnt brick. In either case, the piers to be built in good lime mortar, composed of good strong lime and clean sharp sand. If wooden posts, they should be of cedar or locust, not less than 8 by 8 inches. The piers to be carried to a sufficient depth in the ground to secure from frost. The chimney flues shown on plan to be built of good merchantable brick, of sizes in clear shown, thoroughly plastered inside, and provided with 6-inch earthenware or sheet-iron thimbles, and tin caps to receive stove-pipes when required. The chimneys above the roof will be built of hard-burnt, selected brick, with cap as shown.

Carpenter Work.

The frame will be a balloon frame, sills 6 by 8 inches, all resting on stone or brick piers, or timber posts, as above specified; two cross sills will be put to each ward, and the sills of the rear building will continue through the main building. All the sills will be mortised, tenoned, and pinned to each other. The studs will be framed or notched into the sills, and, together with the joists, strongly and securely nailed to the sills with proper nails.

The studs for exterior walls will be notched at ends to fit into the sill mortise, and will be 2 by 6 inches, placed 16 inches from centres; doubled at all corners and openings, and well braced and bridged where necessary, being braced at the corners at least 5 feet up on the stud, and bridged over all openings. The joists of second floor will be carried on a ribbon, 1 by 4 inches, let into and strongly nailed to studs. Partition studs will be 2 by 4 inches, placed 16 inches from centres, strongly braced and bridged. All the joists will be 2 by 10 inches, placed 16 inches from centres, strongly spiked to studs, and will have three rows of herring-bone 1 by 1½ inch bridging in the width of ward building, and one row in width in other spans. The ceiling joists will rest on a wall plate, spiked to the studs in two thicknesses of 2 by 4 inch stuff put on to break joints. The ceiling joists will be bridged as the floor joists are described to be.

The roofs of main building and wards will be constructed of 2 by 8 inch stuff, the roofs of back building, etc., of 2 by 6 inch stuff. The roof of administration building will have 3 by 12 inch hip rafters resting inside on partitions. The rafters will be placed 2 feet apart. The rafters for wards will be placed 2 feet 8 inches apart.

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* For specification for cistern see page 8.

The roofs of verandas will have 2 by 6 inch rafters, placed 2 feet apart, notched on veranda rail and nailed to studs. All the roofs will be closely sheathed with common cullings; those for verandas dressed on lower side. The roofs on building to be shingled with A No. 1 shaved shingle, laid one third to the weather; they will be cut to lap over on the hips. The ventilator on the ridge will be constructed of 2 by 4 inch stuff, covered with shingles on rough boarding on outside, and lined with ⅝ matched tongued and beaded stuff to form inside ceiling.

The veranda posts will be 7 by 7 inches, solid chamfered and stopped; the braces will be 4 by 4 inches; all framed together, and chamfered as shown on drawing. A 3 by 10 inch dressed piece will be gained into veranda posts, on which the veranda rafters will be notched.

All of the exterior walls will be rough boarded, with inch boarding, well nailed, on which will be laid a covering of tar paper or felt, and finished with clear siding, each board lapped 1½ inches on the other; corner boards will be put on double to each corner; a fascia board will be put under veranda roof. A base board, with cap, will be put all around building to receive siding. Cornice will be constructed of ⅞-inch stuff.

Outside steps from ground to floor of veranda will have 2-inch strings and treads, with rounded nosing returned on ends; 1-inch risers resting on a stone flag raised above surface of earth. The first and second floors will be covered with inch tongued and grooved flooring not over 5 inches wide, of good quality, free from large or loose knots, shakes, or sap, dogged every fifth board, and firmly and secretly nailed. The floors of the veranda will be covered with similar flooring 2½ inches wide, put together with white lead, and also secretly nailed.

All of the windows will be double hung; the pulley stiles will be 1¼ inches thick, sill 1½ inches, face board 1 inch, and top piece rebated to receive weather-boarding. Sash will be 1½ inches thick, check rail glazed with No. 1 American single-thick glass well sprigged and puttied. The frames will be furnished with parting strips, sash beads, 2½-inch brass axle pulleys, cast-iron round sash weights hung with best quality hemp cord. Bronze sash locks on the meeting rails, and all other appurtenances of the best description.

The exterior doors will be 3 feet by 7 feet 6 inches by 1¾ inches, hung with 3½ by 4½ inch loose butt hinges, 3 hinges to each door. They will be provided with good mortise locks with brass bolts and springs, and brown mineral knobs and trimmings. Each door will be furnished with a round 4-inch brass slip bolt. The frames will be got out of 1½-inch stuff, rebated for door, having beaded face board 1 inch thick; transoms will be placed over each door, with sash divided in three lights, hung on swivels, and fastened with brass slip bolt. All doors will be four panelled O. G. on stiles and rails. Inside doors will be 3 feet by 7 feet by 1⅜ inches, similar in all respects to doors above described, excepting that there will be no brass bolts in addition to the locks. The frames will be of inch stuff, having an O. G. stop ¾ inch thick by 2½ inches wide, planted to receive door. Transoms will be as described above, excepting that they shall have no slip bolt.

All doors and windows shall have a moulded casing, 5 inches wide, mitred around; the windows will have a plain stool and apron. Washboards will be run around each room let into a shoe; they will be 8 inches high, O. G. on top. The stairs will be built on strong bearers having 1-inch beaded strings, 1¼-inch treads with rounded nosings and scotia under; the risers will be ⅞ inch thick. Balusters will be turned, 1½ inches diameter of hard wood, and the rail will be 2½ by 3½ inches frog back. The whole will be set on strong bearers, and well put together. Turned hard-wood stops will be put to washboards to prevent doors from striking the plaster.

Closets will be fitted up with slat shelves, strips, and hooks; turned angle strips 6 feet high will be put to all plaster arrises.

A cistern out of 1½-inch dressed stuff, dovetailed and strongly put together with white lead, will be put over ceiling, when directed, 5 by 5 by 2 feet deep, supplied by a pump in sunk cistern through a 1½-inch pipe.

Plastering.

All of the walls and ceilings will be lathed and will receive two coats of plaster, hard finished in plaster of Paris. The browning coat will be put on with good mortar composed of thoroughly slaked lime, clean sharp sand, and a plentiful supply of well-beaten long winter ox-hair. The finishing coat will be composed of lime, putty, and plaster of Paris exclusively, and will be well trowelled. All surfaces will be straight, plumb, and out of winding; angles and arrises of chimneys will be straight and plumb.

The ventilator duct in wards will be lathed and plastered.

Tin Work.

The roofs of verandas will be tinned with best roofing tin, laid on tar or felt paper, with standing grooves, and well secured to the sheathing by a sufficient number of flaps. Sunk or valley gutters to be put to all roofs, with sufficient fall to down spouts. Conductors 3 inches in diameter will convey the water to cistern connections.

Tin valleys and flashings, wherever they are required, to be furnished and put in place. Scuttles to be covered wholly with tin.

A 20 by 8 inch galvanized iron ventilating pipe for ventilation of ward, running between joists, opening under floor of veranda, having 2 regulating registers at ends of pipe. In the centre of this pipe, on the upper surface, should be an opening 20 inches square corresponding with a similar opening in the floor of the ward, over which a jacketed stove may be placed. Where it is impossible to obtain the galvanized iron, wood may be used. In climates so cold that it is necessary to use two stoves, there will be two ventilating pipes, each 10 by 12 inches, arranged in the same way in connection with each stove. A force pump at sunk cistern will be provided for pumping water into cistern in roof. A 1½-inch pipe will go from sunk cistern to cistern in roof.

Painting.

The entire wood work usually painted inside and out will receive two coats pure white lead and pure boiled linseed oil. All knots and sap spots will be killed, and nail holes puttied. The second coat will be a good covering coat. The floors of the verandas will have three coats pure boiled linseed oil and yellow ochre. All tin roofs, gutters, conductors, and flashings will be painted two coats metallic paint.

III.—SPECIFICATION OF LABOR AND MATERIAL FOR CONSTRUCTION OF A REGULATION TWO-STORY POST HOSPITAL.—PLATES E, F, G, H.

Excavation.

The trenches for piers will be dug to the sizes shown on drawings, properly levelled for footings; the sunk cistern to be dug to a depth of 16 feet, and 18 feet in diameter; the earth to be filled in around piers and sunk cistern, well rammed, and the superfluous earth to be deposited on the ground as may be directed.

Mason Work.

The sunk cistern will be built with the best burned hard brick and Portland cement, 15 feet deep, and 15 feet in diameter, walls 14 inches thick, bottom, 2 rows of brick on edge laid in cement and grouted with liquid cement, the top to be arched as a dome having manhole 2 feet 6 inches in diameter covered by a movable stone, 3 by 3 feet by 4 inches thick; a hole to be left in top 3 inches in diameter for stem of pump.

The piers for supporting hospital (*if stone*) will be 2 feet by 16 inches thick, of large flat-bedded stones laid to break joints; (*if of brick*) to be 16 inches square of best hard burned sound brick, set on footings of stone 2 by 2 feet by 6 inches thick, depths as shown by drawings.

The mortar for the building of piers of stone or brick to be composed of the best strong lime and clean sharp sand in proper proportions and thoroughly mixed together.

The chimney flues will be built of brick, sizes as shown on plans, thoroughly plastered on inside and provided with 6-inch earthenware or sheet-iron thimbles, and tin caps, to receive stove pipe when required.

The chimneys above the roof will be built of hard burnt, selected bricks with caps as shown.

[*]*Carpenter Work.*

The frame will be a balloon frame, sills 6 by 8 inches. Studs to exterior walls to be 2 by 6 inches. Studs to inside partitions 2 by 4 inches. First and second floor joists 2 by 10 inches. Rafters and ties 2 by 8 inches; those over veranda 2 by 6 inches.

The sills will rest on the piers and cross sill to be framed and pinned into longitudinal sill; the studs to be mortised into the sills with 2 by 6 inch mortises; the joists to be framed on to the sill or ribbon as the case may be, and to be strongly and securely nailed with proper nails, 16-inch centres.

The studs will be notched at ends to fit into the sill mortises, and will be placed 16 inches from centre to centre, doubled at all corners and openings and well braced and bridged when necessary, being braced at the corners at least 5 feet up on the stud, and bridged over all openings; the joists on the second floor to be supported by a ribbon 1 by 4 inches let into and strongly nailed to studs; all the joists will be strongly spiked to studs and will have three rows of herring-bone bridging 1 by 1½ inches, (3 rows in the width of main building;) the ceiling joists will be bridged as floor joists are described to be, and suspended by 2 by 4 inch suspenders from rafters every fifth joist. The rafters will be placed 2 feet 8 inches from centre to centre. The veranda posts will be 7 by 7 inches and rest on a hard-wood plate 10 by 10 by 3½ inches; posts to be dressed and stop chamfered, the rail at top to be 4 by 6 inches, the braces 4 by 4 inches, all chamfered as shown on drawings; 3 by 10 inch bearers will rest on a continuous dressed piece 2 by 6 inches, strongly nailed to studs, and will also rest on piers and framed into posts, and will be securely fastened; on these, 3 by 10 inch bearers will rest, the 2 by 6 inch joists for veranda floors, placed 16 inches from centre to centre, notched on to bearers 2 inches and securely spiked; the second floor all dressed underneath. The handrail around the second floor veranda will be 3 by 4 inches, framed into posts; the cross and upright pieces will be 2 by 3 inches mortised into handrail, and bottom rail chamfered and framed as shown on drawings.

All the exterior walls will be rough boarded with inch boarding well nailed, on which will be laid a covering of tar paper or felt, and finished with clear siding, each board lapped 1½ inches on the other, corner boards will be put on double to each corner. Face boards 8 by 10 inches wide having mould will be put at front of veranda floors. Plain face boards 13 and 17 inches wide at second floor of veranda and at wall plate of balloon frame and cut between rafters. A base board will be put all around building to receive siding.

The first and second floors will be covered with inch tongued and grooved flooring not over 5 inches wide of good quality, free from large or loose knots, shakes or sap, dogged every fifth board, and firmly, securely, and secretly nailed. The floors of the veranda will be covered with similar flooring 2½ inches wide put together with white lead and also securely and secretly nailed.

The ventilator on roof will be constructed of 2 by 4 inch stuff, covered with shingles on rough boarding on outside, and lined on bottom with dressed inch stuff; the duct or opening in ceiling will be 10 feet by 2 feet 6 inches, formed by 2 by 4 inch pieces nailed from ceiling joists to rafters, and lathed for plastering. A 2 by 3 inch rebated stop will be nailed from ceiling joists to rafters, and lathed for plastering. A 2 by 3 inch rebated stop will be nailed on ceiling joists along centre sides and ends of ventilating duct, to the centre piece will be hung 2 battened doors with all necessary ropes and pulleys to open and shut.

All of the windows will be double hung; the pulley stiles will be 1¼ inches thick, sill 1½ inches, face board 1 inch, and top piece rebated to receive weather-boarding. Sash will be 1½ inches thick, check rail, glazed with No. 1 American thick glass, well sprigged and puttied. The frames will be furnished with parting strips, sash beads, 2½-inch axle pulleys, cast-iron round sash weights, hung with best-quality hemp cord. Sash locks on the meeting rails, and all other appurtenances of the best description.

The exterior doors will be 3 feet by 7 feet 6 inches by 1¾ inches, hung with 3 by 4½ inch loose butt hinges, 3 hinges to each door. They will be provided with good mortise locks, with brass bolts and springs, and brown mineral knobs and trimmings; each door will be furnished with a round 4-inch brass slip bolt. The frames will be got out of 1½-inch stuff, rebated for doors, having beaded face board, 1 inch thick; transoms will be placed over each door, with sash divided in three lights, hung on swivels, and fastened with brass slip bolts. All doors will be 4 panelled, O. G., on stile and rails. Inside doors will be 3 by 7

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[*] If wooden posts are used for supporting balloon framing, etc., they should be of cedar or locust not less than 8 by 8 inches.

feet by 1⅜ inches, in all respects as above described, excepting that there will be no brass bolts on the doors in addition to the locks; the frames will be of 1-inch stuff, having an O. G. stop, ¾-inch thick and 2½ inches wide, planted to receive door; transoms will be as described above, excepting that they will have a stop on inside—they shall have no slip bolt.

All doors and windows shall have a 5 by 1 inch moulded casing mitred around; the windows will have a plain stool and apron. Washboards, 6 inches deep, moulded, will be run round each room, let into a shoe.

Outside steps from ground to floors of veranda will have 2-inch strings and treads, with round nosings returned on ends, 1-inch risers resting on a stone step. The stairs will be built on strong bearers, having 1-inch beaded strings 1¼-inch treads, with rounded nosings and scotia under; the risers will be ⅞ inch thick, the treads and risers strongly glued, blocked, and screwed together and on to bearers. Balusters will be turned 1½ inches thick of hard wood, and the rails will be 2½ by 3½ inches, frog backed; the whole will be well put together. The veranda stairs will have a rail similar to that round second story veranda. A step-ladder will be placed from landing of staircase inside to scuttle in ceilings, having 5 by 1¼ inch side, and 1¼-inch treads, 1 foot 6 inches wide over all. An iron ladder from top veranda to scuttle in roof, sides 2 by 2½ inches, and ½-inch round spokes, 14 inches wide over all.

Turned hard-wood stops will be put to washboards to prevent doors from striking plaster.

Closets will be fitted up with slat shelves, 2 rows moulded hook rails, 1 by 4 inches, and hooks fixed 12 inches apart; turned angle strips 6 feet high, will be put to all plaster arrises.

A cistern out of 1½-inch dressed stuff, dovetailed and strongly put together with white lead, will be put over ceiling when directed, 5 by 5 by 2 feet deep, supplied by the pump in sunk cistern through 1½-inch pipe. A rough 1-inch gangway over ceiling, 3 feet wide, will be laid full length of roof.

Two scuttles in roof, of 1-inch batten, door 3 feet by 2 feet 6 inches, and 10 by 2 inch rebated frame, hung with back-flap hinges and fastener complete. One scuttle in ceiling over landing of staircase, 2 feet 6 inches by 2 feet 6 inches, and 10 by 2 inch rebated frame, with door hung with back-flap hinges and fastener complete. Roof and ceiling joists to be trimmed for the above scuttles.

Plastering.

All the inside walls and ceilings and the sides of ventilating duct, will be lathed, and will be two-coated, hard finished in plaster of Paris. The browning coat will be put on with good mortar composed of thoroughly slaked lime, clean sharp sand, and a plentiful supply of well-beaten long winter ox-hair; the finishing coat will be composed of lime, putty, and plaster of Paris exclusively, and will be well trowelled; all surfaces will be straight, plumb, and out of winding; angles and arrises of chimneys will be straight and plumb.

The walls and bottoms of sunk cistern will be coated with hydraulic cement and clean sharp sand three-fourths of an inch thick and trowelled clean.

Tin Work.

See paragraph on tin work under I and II.

Painting.

See paragraph on painting under I and II.

SPECIFICATIONS FOR FITTING UP THE DISPENSARY IN A REGULATION POST HOSPITAL OF 24 BEDS.

Follow working drawings (see Plate L) showing arrangement of shelves, drawers, cupboards, counter, scale case, etc.

Construct shelving against the three sides of the walls A, B, and C of the room marked "Dispensary;" the same to be finished at the top with a cornice and frieze as shown on drawings. The corona of cornice to be formed of a crowning O. G. with fillet and cove, together in one piece, measuring about 5 inches; under the cornice a plain fascia ⅞ inch thick; on this fascia to be planted a heavy bead, as per drawing, forming the frieze. The standards supporting the shelves to be finished with a beaded edge to unite with the horizontal piece or fascia under the cornice. Shelving to project 6 inches and the cornice 12 inches from the face of the wall.

Under the shelving, construct drawers and cupboards; all of the drawers to be 5 inches deep, (outside,) certain of them to be short, others long for roll plaster, etc. The drawers to be fitted with knobs or handles to conform to the general finish of the hospital.

Make cupboards under the drawers, each to be fitted with raised panel doors, with hinges, knobs, and locks complete.

The centre space to be open, as shown by drawing, the same to have at upper corners coved brackets formed of 2-inch plank; the whole front of cupboard to rest upon a hard-pine sill ⅞ inch thick with bevelled edges.

Counter.

Construct counter with lift, as per drawing, the top to be formed, if practicable, of one board 1½ inches thick, with nosing edge supported by a fillet and O. G. moulding underneath. The counter to project at top 4 inches beyond base as shown on drawing; the vertical sides of the same to be formed of matched and beaded boards about 3 inches wide and ⅞ inch thick. The counter to have a base with moulded top, as per drawing, or, when practicable, to conform to the base moulding of the room. The rear of counter to be fitted up with drawers and shelves as shown by rear elevations of same. The drawers to be 5½ inches deep, outside, and to be finished in the same style as the other drawers.

Scale Case, etc.

Construct a scale case and screen for tank on the top of the counter as shown in drawing. The scale case to be panelled on the front and sides in a manner similar to the cupboard doors; to be divided in the rear into a central space or recess for scales, and with pigeon holes and drawers.

Construct platform with small drawer for scales, complete with knobs, etc., to compare with general finish.

Construct strong shelves of 2-inch stuff for support of tank and waste-water pail; the same to be firmly secured to bear the heavy weight which must rest upon them.

Sink.

Construct sink of 1½-inch stuff, size as per drawing, the same to be lined with lead and provided with waste pipe and stopper complete, and made perfectly tight and warranted not to leak.

Tank.

Provide a new strong oak 20-gallon cask with metal hoops well made and tight, furnished with a curved spigot complete. The cask to have a circular hole in top with flanged cover complete for filling the same.

All the wood work unless otherwise specified, to be of good clear pine to conform to the general finish of the hospital.

Painting.

Two coats of white paint, following the specifications as laid down for the hospital building.

SPECIFICATIONS FOR FITTING UP THE DISPENSARY IN A REGULATION TWO-STORY POST HOSPITAL.

Follow working or detail drawings (see Plate M) showing arrangement of shelves, cupboards, counters, etc.

Construct shelving against the wall of the room marked "Dispensary," opposite the window, the same to be finished at the top with a cornice as per drawing. The corona of cornice to be formed of a crowning O. G. with fillet and cove in one piece, the whole measuring about 5 inches; a supporting O. G. for the supporting member of the cornice; under this a plain fascia ⅞ inch thick and 4 inches deep from soffit of cornice.

The shelves, drawers, cupboards, counter, scale case, etc., to be similar in finish, material, and design to same parts of the 24-bed hospital, varying only as to plan and minor details as shown in special drawings for this case. (See specifications for fitting Dispensary of 24-bed Regulation Post Hospital.)

SPECIFICATIONS FOR BUILDING A DEAD HOUSE FOR U. S. POST HOSPITALS.—PLATE B, 2.

Construct a small frame building for a Dead House, as per drawings, (see Plate B, 2,) the same to be 13 feet by 26 feet, outside measurement, one story high, and to measure 10 feet 2 inches from the top of sill to top of plate, and to have a gable roof of one-third pitch; the interior to be divided into two rooms, one 12 feet by 12 feet, the other 12 feet by 12 feet 6 inches.

The building to rest on stone or brick piers or wooden posts; in this manner to conform to the construction of the hospital building. The piers, if of brick, to be a brick and a half square, one at each corner, two on each side, and one on each end between the corner posts.

These piers to be 8 inches above the level of the ground, and above the line of latitude of Washington, D. C., to have a foundation 3 feet below the surface. South of this line, or where danger from frost is not to be apprehended, they may be 2 feet 6 inches only.

Excavation.

Excavate trenches for the foundation of the chimney and the several piers of the required size and depth.

Chimney.

Construct one chimney in the centre of the building; the same to be 20 feet high from the level of the ground, and to have a solid foundation of stone two or three feet below the level of the ground according to the climate of the locality.

Construct two fire-places, back to back, as shown on drawing, the same to be 12 inches deep, 3 feet wide, and 3 feet high. Above the fire-place, work in two flues each 8 by 8 inches, forming a shaft 1 foot 4 inches by 2 feet 4 inches, the same to be capped out at top with two projecting courses of brick as a finish.

Make the roof about the chimney tight with flashing in accordance with specifications for building hospitals.

Frame.

Sills to be 6 by 6 inches, corner posts 4 by 6 inches, studs 2 by 4 inches—16 inches on centres, excepting window and door studs, which will be 3 by 4 inches; plates to be 3 by 4 inches; floor joists to be 2 by 10 inches—12 inches on centres, with one row of longitudinal bridging; rafters 2 by 6 inches, and ceiling joists 2 by 6 inches, each 2 feet on centres.

Sheathing.

Cover roof with rough boarding, 1 inch thick, using such material as is commonly used in the locality where the hospital is built.

In northern latitudes the sides of the building to be sheathed in a manner similar to roof; in southern latitudes the weather-boarding on the sides to be directly upon the studding.

Roof.

Cover roof with shingles, in quality and manner to conform to the specifications of hospital building.

Clapboards or Weather-boarding.

Cover sides of building with weather-boards to conform to specifications of hospital building.

Partition and Closet.

Construct partition between two rooms and form closet, with ⅞-inch matched soft-pine boards.

Ceiling.

The ceiling of the larger room to be formed of ⅞-inch matched boards.

Finish.

To finish roof, construct cornice, corner, and base or plinth to accord with general finish of hospital building. Make four window-frames and finish the same with sash and 10 by 16 inch glass, complete.

Make two door-frames and finish doors with transoms. The soffit of door-frames to be on a level with soffit of windows. Sashes to be the same in thickness and general character as those of hospital building and to be furnished with patent springs instead of cords and weights.

There are to be two outside and two inside doors with raised panels; outside doors to be 3 by 7 feet and 1¾ inches thick; inside doors, the one between the rooms to be 3 by 7 feet and 1⅜ inches thick, the closet door 2 feet 6 inches by 6 feet, 1¼ inches thick.

Construct two outside steps, with platform 2 by 4 feet with one step thereto; the rise of steps to be 8 inches. These platforms and steps to be constructed in a substantial manner with good finish and to accord with outside steps of hospital building.

The whole building, so far as the woodwork is concerned including outside platforms and steps, to be painted to accord with the specifications of the hospital building as regards coats, color, etc.

The following points should also be embraced in the specifications—the precise mode in which they are to be stated depending on the circumstances of each particular case:

1. In all cases the ground floor must be raised at least 18 inches from the ground. In warm climates and malarious regions the ground floor should be raised at least 3 feet above the ground, on piers or open arches. To insure cleanliness the space between piers or arches should be fitted with lattice work sufficiently open to allow free ventilation.

2. A good cistern of suitable capacity is to be constructed and connected with the gutters and eave spouts of the roof. In northern climates where the nature of the ground is suitable a good cellar, well drained and ventilated, is to be constructed under the kitchen.

3. The dispensary is to be neatly fitted with shelving, drawers, and counter, and the storerooms with shelving, which, for bedding and clothing, will be open racks with slat bottoms.

4. The windows of the administration building, both above and below, will be furnished with outside shutters, and will be 6 feet 6 inches high by 3 feet 3 inches wide.

The windows of the isolation ward should be made secure with a frame containing an iron grating, this room being intended to receive sick prisoners, cases of delirium tremens, etc., when not in use for cases of low fever, etc. Contagious disease, such as small-pox, should be treated in hospital tents when the weather permits, and the isolation ward should not be used for such cases.

5. The dimensions given each room in the plans must be attained in the clear.

6. At posts where the mean temperature of the winter is liable to fall below 28° Fahrenheit, the ceiling of the ward being 12 feet from the floor, the windows will be double and 9 feet high by 3 feet 3 inches wide.

7. The arrangements for ventilation of the wards will vary according to climate. On the Gulf coast and in Arizona the wards will not be ceiled and will have ridge ventilation their whole length.

At all posts where continuous artificial heat is required for three months in the year, the wards will be ceiled and have boxed openings carried from the centre of the ceiling to the ridge for summer ventilation.

There will be two of these openings, each 10 feet long by 2½ feet wide, and 10 feet apart, each fitted below with lattice work and above with movable shutters.

A ventilating shaft 6 inches square, will be placed in each earth-closet room, and the lamp or gas burner of this room should be directly beneath this shaft.

The chimney of the kitchen will be built with two flues, one of which will open near the ceiling and be used exclusively for ventilation.

8. The Surgeon General will indicate such modifications of this plan as may seem desirable on account of locality, etc., when the plans for each hospital are submitted to him.

In hospitals built of brick, the walls will be 12 inches in thickness, built hollow, a space of not less than 3 inches being left between the inner and outer shells, which will be tied together at intervals of not less than 2 feet by bonders; the air chambers thus formed must be made as nearly air tight as possible by closing them at top and bottom, and laying the brick carefully in full mortar.

9. The privy and dead house should be small frame buildings, removed from the hospital not less than 100 feet when possible. The dead house should contain two rooms each 12 feet square.

10. All doors to have transoms.

At all permanent posts established in future, a proper hospital will be constructed upon the plans here given for Regulation Post Hospitals, under the heads I, II, and III.

J. K. BARNES,
Surgeon General.

The following estimates, in detail, of materials required for the erection of Regulation Post Hospitals are furnished as a guide for making out estimates of cost:

I. ESTIMATE OF MATERIAL FOR A REGULATION POST HOSPITAL OF 24 BEDS.—PLATES A, B, C, D.

IF PIERS ARE OF STONE.

88 yards, cube, excavating.
56 " " stone in foundation.

IF PIERS ARE OF BRICK.

66 yards, cube, excavating.
9¼ " " stone for footings, 6 inches thick.
24,000 bricks in piers.

IF PIERS ARE OF WOOD.

37 yards, cube, excavating.
126 pieces 4 feet by 8 inches—containing 2,688 feet of lumber.

REMAINING EXCAVATING.

197 yards, cube, excavating for flues and sunk cistern.
200 feet, lineal, 6-inch earthenware pipe for conducting rain-water to sunk cistern—pipes laid to proper falls.

BRICKWORK, ETC.

53,000 bricks for flues and for sunk cistern, circular in plan.
3,000 bricks for facings.
2 stone steps, 9 feet 6 inches long by 14 by 8 inches from ground to veranda.
1 stone flag, 3 by 3 feet by 6 inches, for covering manhole of sunk cistern.

CARPENTER AND JOINER.

812 feet, lineal, 8 by 6 inch sill, in about 18 or 20 feet lengths, containing 3,248 feet of lumber.
325 studs, 2 by 6 inches, for outside wing, walls, etc., about 16 feet long—5,200 feet of lumber.
137 studs, 2 by 6 inches, for outside walls of centre wing, about 28 feet long—3,836 feet of lumber.
600 feet, 3 by 6 inch, and 1,235 feet 2 by 6 inches, lineal, for top rails and braces to outside walls—2,135 feet of lumber.
228 studs, 4 by 2 inches, 12 feet long, for inside walls on 1st and 2d floors, containing 1,824 feet of lumber.
903 feet, lineal, 4 by 2 inch head sill and brace, for inside walls, containing 602 feet of lumber.
4,814 feet, lineal, 10 by 2 inch joists, for 1st and 2d floors, in 10, 14, 26, and 36 feet lengths, containing 8,023 feet of lumber.
125 feet, lineal, 4 by 1 inch ribbon, for supporting ends of joists, containing 42 feet of lumber.
402 feet, lineal, cross bridging to joists, 16-inch centres.
2,518 feet, lineal, 4 by 2 inch ceiling joists, 16-inch centres, to wings about 25 feet long, containing about 1,678 feet of lumber.
1,290 feet, lineal, 6 by 2 inch ceiling joists, 16-inch centres, to centre and rear buildings, containing 2,290 feet of lumber.
1,127 feet, lineal, 8 by 2 inch in couple sides, about 15 feet long, and ridge 95 feet long, and to centre roof couples 24 feet long, containing 1,503 feet of lumber.
2,878 feet, lineal, 6 by 2 inch tie beams, to wings 25 feet long, to ties of centre roof 36 feet long; for uprights and struts (short lengths,) and for framing of ventilators, containing 2,878 feet of lumber.
170 rafters, 2 by 8 inches, 16 feet long; } Containing 5,610 feet
180 rafters, 2 by 6 inches, 11 feet long. } of lumber.
574 feet, lineal, 6 by 3 inch, purlin to roofs, principals about 8 feet apart, containing 861 feet of lumber.
120 feet, lineal, 12 by 3 inch hips to centre roof, in 4 pieces, containing 360 feet of lumber.
318 feet, lineal, 8 by 2 inch hips, for shorter lengths to smaller roofs, containing 424 feet of lumber.
28 king bolts, for principals over wings, 3 feet 6 inches long, ¾ inch in diameter, heads, nuts, and washers complete.
4 king bolts, for principals over centre building, 4 feet long.
386 feet, lineal, fascia and mould, 8 inches deep—258 feet of lumber.
386 feet, lineal, fascia and mould, 10 inches deep—322 feet of lumber.
352 feet, lineal, plain fascia, 13 inches deep—382 feet of lumber.
352 feet, lineal, plain fascia, 17 inches deep—499 feet of lumber.
354 feet, lineal, 2 by 6 inch continuous piece, supporting 10 by 3 inch bearers of veranda—354 feet of lumber.
55 posts, 12 feet 6 inches long, 7 by 7 inches, containing 2,695 feet of lumber—for veranda.
460 feet, lineal, 10 by 3 inch, for bearers, in 46 pieces in 10 feet lengths, containing 1,150 feet of lumber.
346 feet, lineal, 4 by 6 inch head, for veranda, containing 692 feet of lumber.
390 feet, lineal, in 74 pieces, braces, 4 by 4 inches, containing 512 feet of lumber.
7,850 feet, superficial, 1-inch tongued and grooved boarding, to 1st and 2d floors, 5 inches wide.
4,900 feet, superficial, 1-inch tongued and grooved boarding, for veranda, 2¼ inches wide.
18,500 feet, superficial, 1-inch rough boarding, to walls and roof.
12,600 feet, superficial, 1-inch dressed siding, lap 1½ inches, for outside walls.
9,900 feet, superficial, tar paper, for outside walls.
62,150 shingles, for roof.
144 feet, lineal, 2 by 3 inch wrot and rebated stop and middle rail, for hanging battened flaps to for regulating ventilation—72 feet of lumber.
100 feet, superficial, 1-inch stuff, in 4 ventilating batten doors.
30 feet, superficial, 1-inch stuff, in 4 scuttle doors: one in ceiling over landing over staircase, 2 feet 6 inches by 2 feet 6 inches, and 3 in roofs, 3 feet by 2 feet 6 inches.
52 feet, lineal, 2 by 10 inch rebated frames for scuttles
608 feet, lineal, 2-inch suspenders.
1 wood ladder, 14 feet long, from landing to ceiling; sides 5 by 1¼ inch treads; 1 foot 6 inches wide
68 feet 8 inches, superficial, 1½-inch wrot stuff for cistern in roof, 5 by 5 by 2 feet, and containing 103 feet of lumber.
4,500 feet, superficial, 1-inch rough, for gangway over ceiling, 3 feet wide.
162 feet, superficial, angle staves, for plaster angles.
552 feet, superficial, 2 by 6 inch top rail for frame.
2 flights of steps from ground to veranda, having two treads 9 feet 6 inches long; 1-inch risers, housed on to 2-inch strings, rounded noses and returned ends, all complete.
4 single steps, from veranda to first floor: one 4 feet long, three 3 feet long; 1-inch risers, housed on to 2-inch strings, rounded noses and returned ends, all complete.
1 stair, in 2 flights, 20 treads, from first to second floors, and having a landing; treads 3 feet 9 inches long, newel, hand-rail, and balusters, all complete.
24 windows, box frames, check rails, sashes 1½ inches thick, 12 lights, 22 by 18 inches, for wings.
28 windows, box frames, check rails, sashes 1½ inches thick, 8 lights, 18 by 16 inches.
16 small windows for wards, 2 lights glass, 12 by 16 inches.
52 window stools and aprons; stools 4 feet 6 inches long by 6 by 1¼ inches, aprons 4 feet 6 inches by 6 by 1 inch, containing 360 feet of lumber.
3,400 feet, lineal, 5 by 1 inch moulded casings to doors and windows, both sides.
1 outside door, (front,) 4-panelled, O. G. mould on stiles and rails, 8 by 4 feet, by 1¾ inches thick, transom light divided into 2 panes 22 by 16 inches, frames and moulded transom, all complete.
7 outside doors, 4-panelled, O. G. mould on stiles and rails, 7 feet 6 inches by 3 feet by 1¾ inches thick, transom light divided into 2 panes 22 by 16 inches, frames and moulded transom, all complete.
2 inside doors, 4-panelled, O. G. mould on stiles and rails, 8 by 4 feet, by 1⅜ inches, transom light in one, 44 by 12 inches, frames and moulded transoms, all complete.
18 inside doors, 4-panelled, O. G. mould on stiles and rails, 7 by 3 feet, by 1⅜ inches thick, transom light divided into 2 panes 16 by 12 inches, frames and moulded transoms, all complete.

23 hard-wood stops.
500 feet, lineal, base mould, outside of building, containing 564 feet of lumber—the under piece 8 by 1¼ inches and the capping piece 3 by 1¼ inches.
1,520 feet 6 inches, lineal, washboards, 6 inches deep, let into shoe, (O. G. mould.)
378 feet, lineal, shelving for closets, 2 rows.
190 feet, lineal, 4 by 1 inch moulded hook-rails for closets, one row.
23 pairs outside shutters for administration building.

HARDWARE.

52 windows double hung with best hemp cord and cast-iron weights, requiring about 516 yards of cord and about 2,320 lbs. of cast-iron weights.
52 sash locks for sashes.
39 pair of hinges, 3-inch, loose joints.
27 mortise locks for all doors.
27 pairs of brown mineral knobs.
10 round, 5-inch, brass bolts to outside doors.
5 springs for outside doors.
23 pairs of swivels for hanging transom lights.
18½ dozen hat and cloak hooks, fixed to hook rails.
12 pairs of 2½-inch back-flap hinges for ventilation doors, 3 on each.
4 pairs of hinges for scuttles.
88 yards best hemp cord, for opening and shutting doors of vents.
12 screw pulleys for cord to run on.
4 fasteners for scuttles.
4 hooks for fastening cord to in room.
32 swivels for small windows of wards.

PLASTERING.

2,650 yards, superficial, 2-coat lath and plaster to ceilings, walls, and inside ventilators.
104 yards, superficial, cementing, ¾-inch thick, for the bottom and sides of sunk cistern.

TIN WORK.

4,900 feet, superficial, for roofing verandas.
327 feet, lineal, tin flashings to chimneys, &c., 10 inches deep.
300 feet valley gutters, 20 inches wide.
228 feet, lineal, tin gutters, 14 inches wide to valleys.
204 feet, lineal, 4-inch conductors, taken to ground, 12 stacks.
50 feet, lineal, 20 by 8 inch (or 100 feet, lineal, 10 by 12 inch) galvanized-iron ventilating pipe.
4 register regulating valves, fixed at outside of balloon frame.
45 feet, superficial, tin coverings to scuttle on roof.
1 cistern and force pump.
50 yards, lineal, 1½-inch lead supply-pipe from sunk cistern to cistern in roof.
1 iron grating for isolation ward.

PAINTER.

4,000 square yards, 2-coat oil painting.

III. ESTIMATE OF MATERIAL FOR A REGULATION POST HOSPITAL OF 12 BEDS—TWO STORIES HIGH.—PLATES E, F, G, H.

IF PIERS, ETC., ARE OF STONE.

44 yards, cube, excavating.
30 yards, cube, stone in foundation.

IF PIERS ARE OF BRICK.

44 yards, cube, excavating.
6 yards, cube, stone for footings, 6 inches thick.
16,200 bricks in piers.

IF PIERS ARE OF WOOD.

23 yards, cube, excavating.
46 pieces, 3 feet 6 inches by 8 by 8 inches—858 feet board measure.

BRICKWORK.

53,000 bricks for flues and for sunk cistern, circular on plan.
2,700 bricks for facings.
1 stone step, 7 feet by 14 by 8 inches from ground to veranda.

EXCAVATING.

192 yards, cube, for sunk cistern.
100 yards, lineal, 6-inch earthenware pipe, for conducting water to sunk cistern—pipes laid to proper falls.
1 stone flag, 3 by 3 feet by 6 inches, for covering manhole of sunk cistern.

CARPENTER.

286 feet, lineal, 8 by 6-inch sill, in about 18 or 20 feet lengths, containing 1,147 feet of lumber.
202 studs, 2 by 6 inches, for outside wall about 30 feet long—6,060 feet of lumber.
416 feet, lineal, 3 by 6 inch top plate, containing 624 feet of lumber.
191 studs 12 feet long, 4 by 2 inches; } for first and second floor,
100 studs 16 feet 6 inches long...... } 2,662 feet of lumber.
670 feet, lineal, 4 by 2 inch head and sill, containing 446 feet of lumber.
1,086 feet, lineal, 4 by 2 inch braces, one row in each story—724 feet of lumber.
118 joists, 10 by 2 inches, in first and second floors, in 26 feet lengths—5,113 feet of lumber.
308 feet, lineal, cross bridging joists, 16-inch centres.
308 feet, lineal, 4 by 1 inch ribbon, for ends of joists, containing 103 feet of lumber.
200 rafters, 16 feet long, 8 by 2 inches, } containing in all 6,467
200 rafters, 11 feet long, 6 by 2 inches, } feet of lumber.
61 tie beams, 30 feet long, 8 by 2 inches—2,440 feet of lumber.
54 feet, lineal, 8 by 2 inch ridge—72 feet of lumber.
4 hips, 21 feet long, 12 by 3 inches, } 372 feet of lumber.
4 hips, 15 feet long, 8 by 13 inches, }
46 posts, 24 feet 6 inches long, 7 by 7 inches, containing 4,577 feet of lumber—for veranda.
795 feet, lineal, 10 by 3 inch bearers, in 84 pieces—1,987 feet of lumber.
3,936 feet, lineal, 6 by 2 inch joists, in 7 feet lengths—3,936 feet of lumber.
576 feet, lineal, 4 by 6 inch stop chamfered piece, in 7 feet lengths—1,152 feet of lumber.
142 braces, 3 feet 3 inches long, 4 by 4 inches, containing 615 feet of lumber.
88 feet, lineal, 2 by 3 inch cross brace, in 32 pieces, 2 feet 9 inches long—44 feet of lumber.
284 feet, lineal, 4 by 3 inch handrail on veranda, in 7 feet lengths—284 feet of lumber.
782 feet, lineal, 2 by 3 inch cross frame work, in 3 feet 6 inch lengths—391 feet of lumber.
290 feet, lineal, fascia and mould, 8 inches deep—193 feet of lumber.
290 feet, lineal, fascia and mould, 10 inches deep—241 feet of lumber.
208 feet, lineal, plain fascia, no mould, 13 inches deep—225 feet of lumber.
208 feet, lineal, plain fascia, no mould, 17 inches deep—295 feet of lumber.
210 feet, lineal, 2 by 6 inch continuous piece, supporting 10 by 3 inch bearers of veranda—210 feet of lumber.
210 feet, lineal, 2 by 6 inch lintel.
625 feet, lineal, 4 by 2 inch stuff in ventilator; uprights 8 feet long; rails 54 feet long; hips 4 feet long; containing 417 feet of lumber.
4,900 feet, superficial, 1-inch tongued and grooved boarding to first and second floors, 5 inches wide.
3,100 feet, superficial, 1-inch tongued and grooved boarding, 2¼ inches wide; for verandas, 5 inches wide.
7,800 feet, superficial, 1-inch boarding for wrot siding, 1¼ inches lap.
11,500 feet, superficial, 1-inch tongued and grooved boarding, rough, for roofs and walls.
5,900 feet, superficial, tar paper for walls.

30,500 shingles for roofs.
90 feet, lineal, 2 by 3 inch wrot and rebated stop and middle rail, for hanging battened flaps to for regulating ventilators—45 feet of lumber.
55 feet, superficial, 1-inch stuff, in two ventilating batten doors.
23 feet, superficial, 1-inch stuff, in 3 scuttles, one in ceiling over landing of staircase, 2 feet 5 inches by 2 feet 6 inches, and two in roofs, 3 feet by 2 feet 5 inches.
39 feet, lineal, 2 by 10 inch rebated frame for scuttles.
68 feet, superficial, 1½-inch wrot stuff, for cistern in roof, 5 by 5 by 2 feet, and containing 103 feet of lumber.
234 feet, superficial, 1-inch rough, for gangway over ceiling, 3 feet wide.
1 step ladder, 16 feet long, of wood, stiles 5 by 1¼ inches and 1¼ inch treads 1 foot 6 inches wide over all.
168 feet angle stave for plaster.
1 flight of steps, from ground to veranda, having 2 treads 7 feet long, 1-inch risers, housed on to 2-inch strings, rounded noses and returned ends, all complete.
6 single steps from verandas to floors; treads 3 feet 6 inches long, 1-inch risers, housed on to 2-inch strings, rounded noses and returned ends, all complete.
1 straight flight of stairs from one veranda to another, in 20 treads 2 feet 9 inches long, having moulding under nose, 1-inch risers, 4 newels, handrails and balusters on each side of flight and around landing, all complete.
1 stair, in two flights, 21 treads, from first to second floor, and having a landing, newels, hand rail and balusters, all complete.
12 windows, box frames, check rails; sashes 1¼ inches thick; 12 lights 20 by 10 inches, for first floor.
11 windows, box frames, check rails; sashes 1½ inches thick; 18 lights 20 by 10 inches, for second floor.
14 small windows for wards, 2 lights 12 by 18 inches.
23 window stools and aprons; stools 4 feet 6 inches by 6 by 1¼ inches; aprons 4 feet 6 inches by 6 by 1 inch, containing 126 feet of lumber.
2,507 feet, lineal, 5 by 1 inch moulded casing to doors and windows, both sides.
7 outside 4-panelled doors, O. G. mould on stiles and rails, 7 feet 6 inches by 3 feet by 1¾ inches thick; transom-light divided into 3 panes 29 by 10 inches; frames and moulded transoms, all complete.
16 inside 4-panelled doors, O. G. mould on stiles and rails, 7 by 3 feet by 1⅜ inches thick; transom lights divided into 3 panes 20 by 10 inches; having frames and moulded transoms, all complete.
1 double folding door for ward, 4 feet 6 inches by 7 feet.
209 feet, lineal, base mould, outside of building, containing 244 feet of lumber—the under piece 8 by 1¾ inches and the capping 3 by 1¼ inches.
1,083 feet, lineal, washboards, 6 inches deep, let into shoe, (O. G. mould.)
185 feet, lineal, shelving for closets, 2 rows.
198 feet, lineal, 4 by 1 inch, moulded hook rails for closets, one row.
23 hard-wood stops for doors.

HARDWARE.

23 windows double-hung with best hemp cord and cast-iron weights, requiring about 269 yards of cord and about 1,490 pounds of cast-iron in weights.
23 sash locks for sashes.
34½ pairs hinges, 3-inch, loose joint.
24 brass mortise locks for doors.
24 pairs of brown mineral knobs.
14 round 4-inch brass bolts to outside doors and transom lights.
7 springs for outside doors.
37 pairs swivels for hanging transom lights and small windows.
16½ dozen hat and cloak hooks, fixed to hook rails.
6 pairs of 2½-inch back-flap hinges for ventilating doors, 3 on each.
3 pairs of hinges for scuttles.
44 yards of best hemp cord for opening and shutting ventilating door.
6 screw pulleys for cord to run over.
3 fasteners for scuttle.
2 hooks for fastening cord to in room.

PLASTERING.

2,000 yards, superficial, 2-coat lath and plaster to ceilings, walls, and inside of ventilators.
104 yards, superficial, cementing, ¾ inch thick, for bottom and sides of sunk cistern.

TIN WORK.

3,000 feet, superficial, tin roofing for veranda.
225 feet tin, for guttering, 20 inches wide.
49 feet, lineal, tin, 4-inch conductor, taken to ground, six stacks.
26 feet, lineal, 20 by 8 inch galvanized-iron ventilating pipe.
2 register regulation valves, fixed at outside of balloon frame.
45 feet, superficial, tin, covering scuttles on roof.
1 cistern and force pump.
50 yards, lineal, 1½-inch lead pipe from sunk cistern to cistern in roof.
2 iron ladders, 16 feet long, 14 inches wide, sides 2 by ½ inches, steps ½ inch diameter.

PAINTER.

7,891 yards, superficial, 2-coat oil painting.

ESTIMATE OF MATERIAL FOR FITTING UP THE DISPENSARY OF A REGULATION 24 BED POST HOSPITAL.—PLATE L.

847 lineal feet soft pine, ¾ inch.
20 lineal feet soft pine for cornice.
20 lineal feet soft pine for beads.
20 lineal feet hard pine for sills.
15 lineal feet soft pine for O. G. base mouldings.
15 lineal feet soft pine for counter, 1¼ inch.

HARDWARE.

12 pairs brass hinges, 2 by 1¼ inches, for cupboards.
1 pair brass hinges, 3 by 2½ inches, for counter lift.
44 metal knobs, small, for drawers and cupboards.
1 20-gallon oak water-cask finished with metal hoops.
1 metal curved spigot for tank.
8 small locks for drawers and cupboards.

PAINTING.

45 square yards painting to accord with that of interior of hospital building—two coats.

ESTIMATE OF MATERIAL FOR FITTING UP THE DISPENSARY OF A REGULATION TWO-STORY HOSPITAL.—PLATE M.

658 lineal feet soft pine, ¾ inch.
35 lineal feet soft pine, 1¼ inch.
30 lineal feet soft pine for cove moulding for base of counter.
16 lineal feet soft pine for O. G. moulding.
16 lineal feet soft pine for O. G. moulding for base of counter.

HARDWARE.

8 pairs brass hinges for cupboards.
36 metal knobs for drawers and cupboards.
4 small brass locks for cupboards.
1 20 gallon oak water cask with metal hoops.
1 curved metal spigot for tank.

PAINTING.

32 square yards, 2 coats, to accord with painting of interior of hospital.

ESTIMATE OF MATERIAL FOR CONSTRUCTING A DEAD HOUSE FOR U. S. REGULATION POST HOSPITALS.—PLATE B, 2.

FRAME.

234 lineal feet, 6 by 6 inches, for sills.
238 lineal feet, 3 by 4 inches, for posts.
392 lineal feet, 2 by 4 inches, for studs.
200 lineal feet, 2 by 8 inches, for rafters.
169 lineal feet, 2 by 6 inches, for ceiling joists.
520 lineal feet, 2 by 10 inches, for floor joists, sheathing boards, roof, and sides.
780 feet, lineal, 1 inch, for sides.
580 feet, lineal, 1 inch, for roof.
129 feet, lineal, ⅞ inch, for finish for base, corner boards, and doors and windows.
30 feet, lineal, 1½ inch, for steps.
6 feet two-inch stuff for transoms.
2,900 shingles.
1,040 square feet clap-boarding.

BRICKS.

2,000 bricks for chimney.
1,000 bricks for piers, if deep.
700 bricks for piers, if shallow.
Sashes for 4 windows, 10 by 16 inch glass.
2 outside doors, 3 feet by 7 feet by 1¾ inches.
1 inside door, 3 feet by 7 feet by 1⅝ inches.
1 inside door, 2 feet 6 inches by 6 feet 6 inches by 1¼ inches.

HARDWARE.

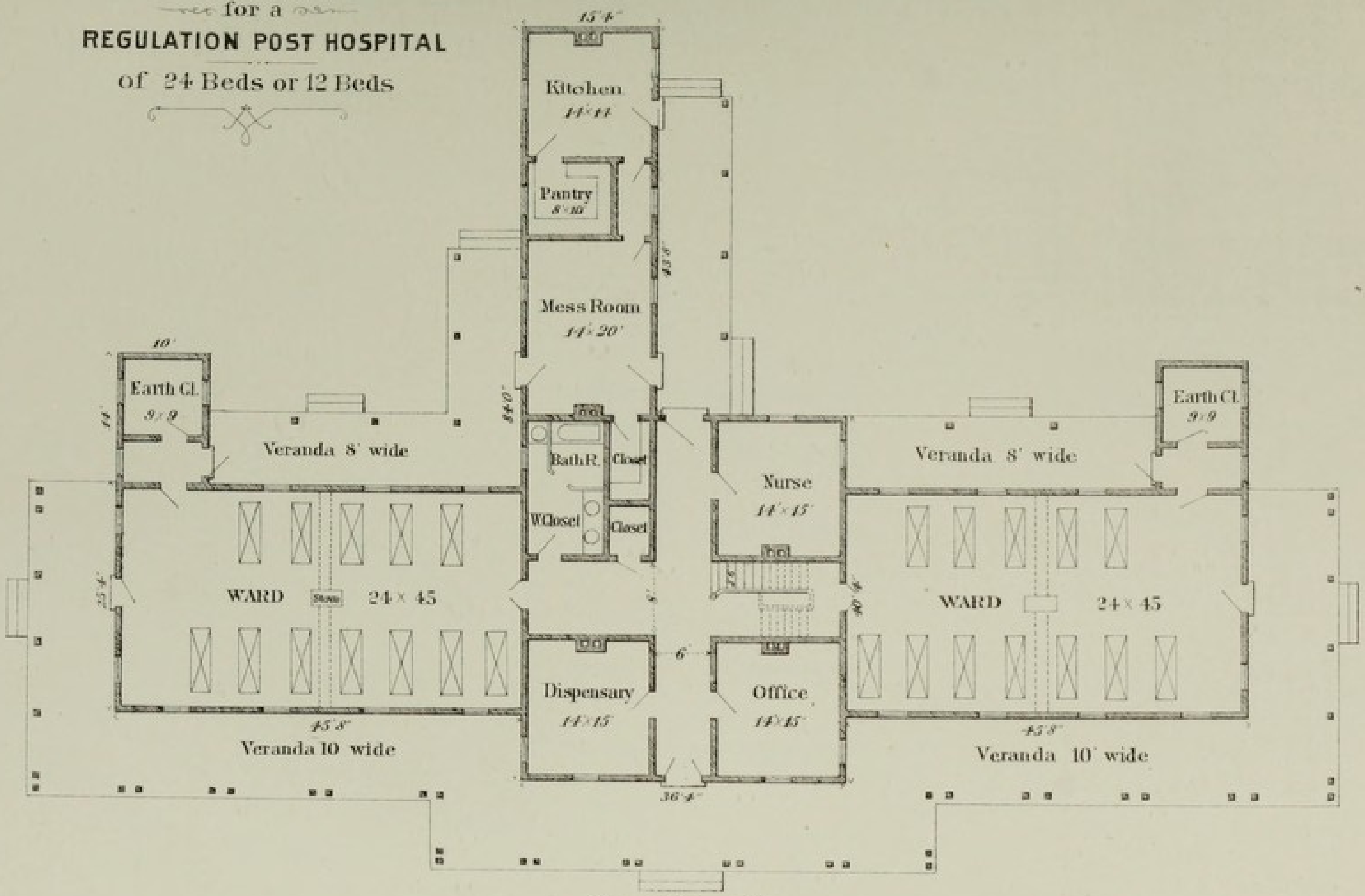
12 close butts, 3 inches, for doors.
4 mineral knobs for same.
4 rim locks for same.
4 sash fastenings.

PAINTING.

2 coats, inside and out, to accord with hospital building, in all about 220 square yards, superficial.

PLATE A

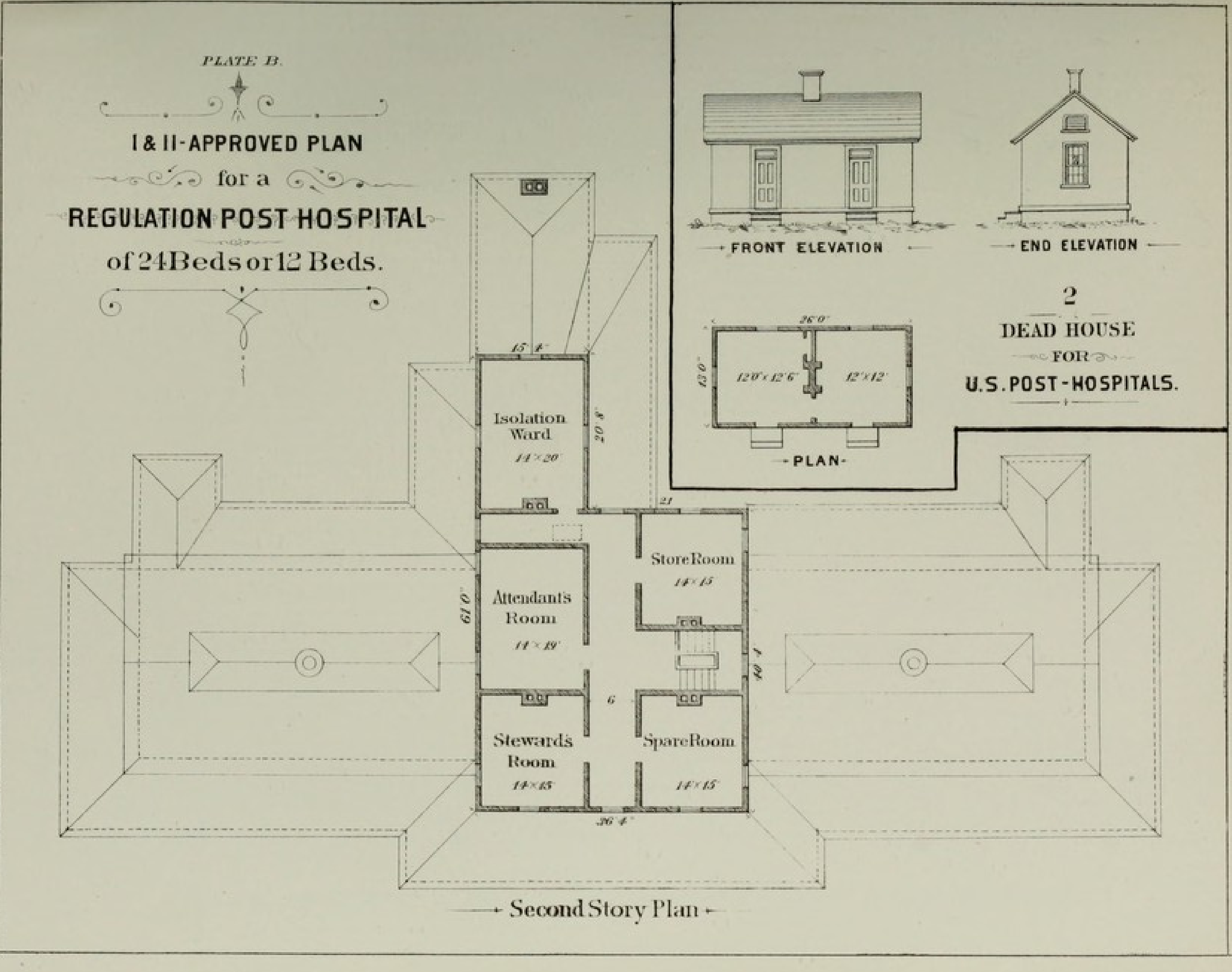
I & II APPROVED PLAN
for a
REGULATION POST HOSPITAL
of 24 Beds or 12 Beds



First Story Plan.

PLATE B.

I & II-APPROVED PLAN
for a
REGULATION POST HOSPITAL
of 24 Beds or 12 Beds.

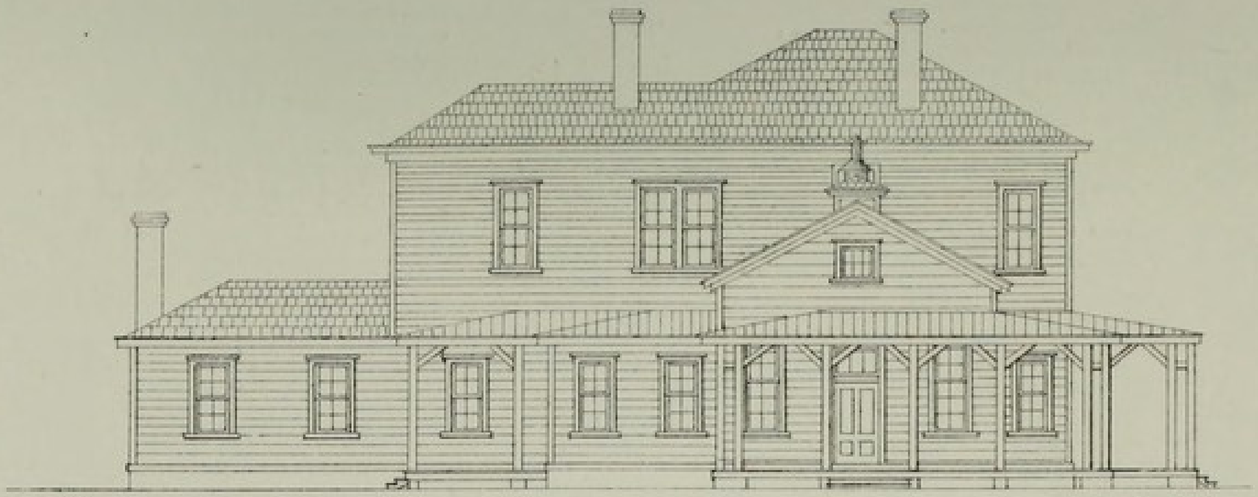


Second Story Plan

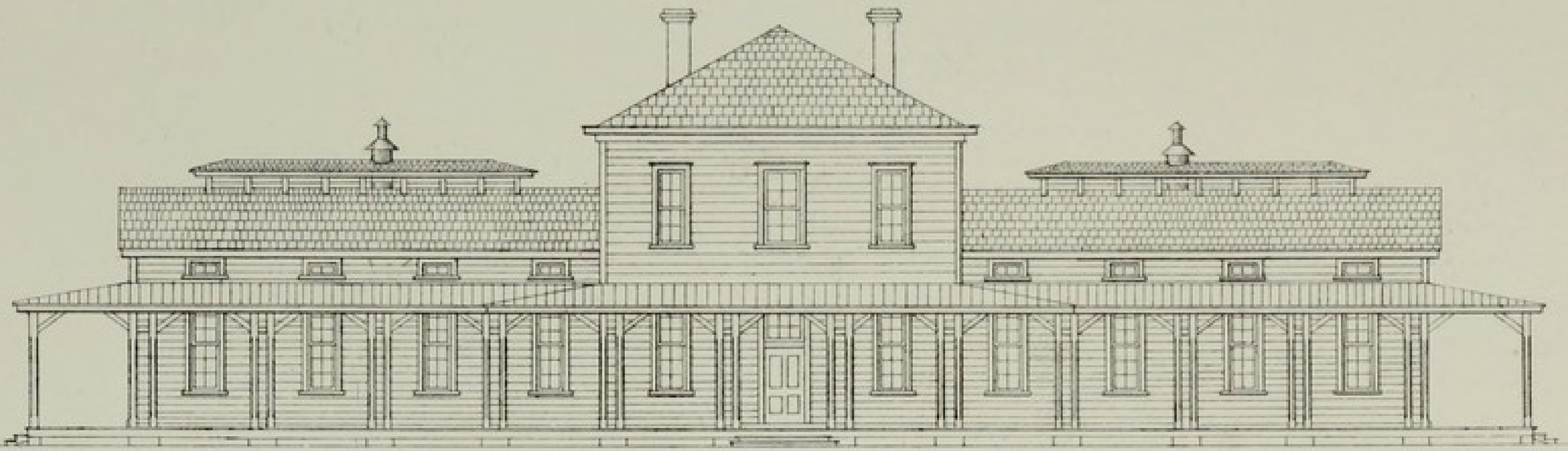
2

DEAD HOUSE
FOR
U.S. POST-HOSPITALS.

PLATE C.



Side Elevation.

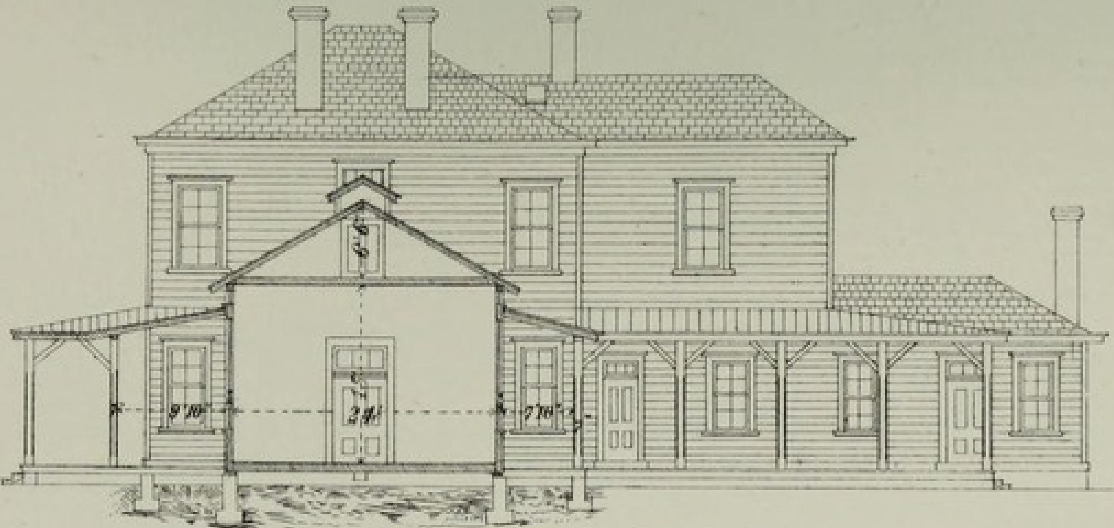


Front Elevation.

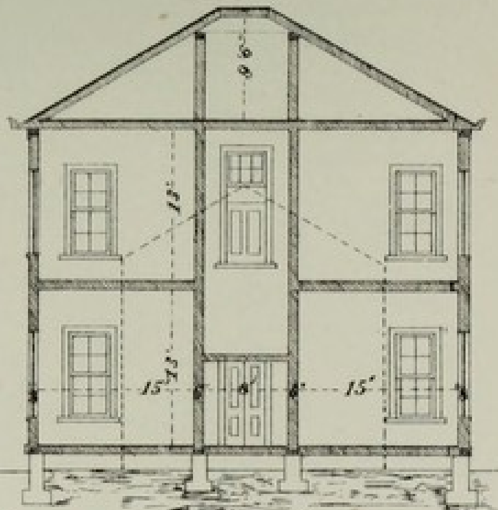
I & II - APPROVED PLAN FOR A REGULATION POST HOSPITAL OF 24 BEDS OR 12 BEDS.

Jas. L. Kervand, Lith. Wash.

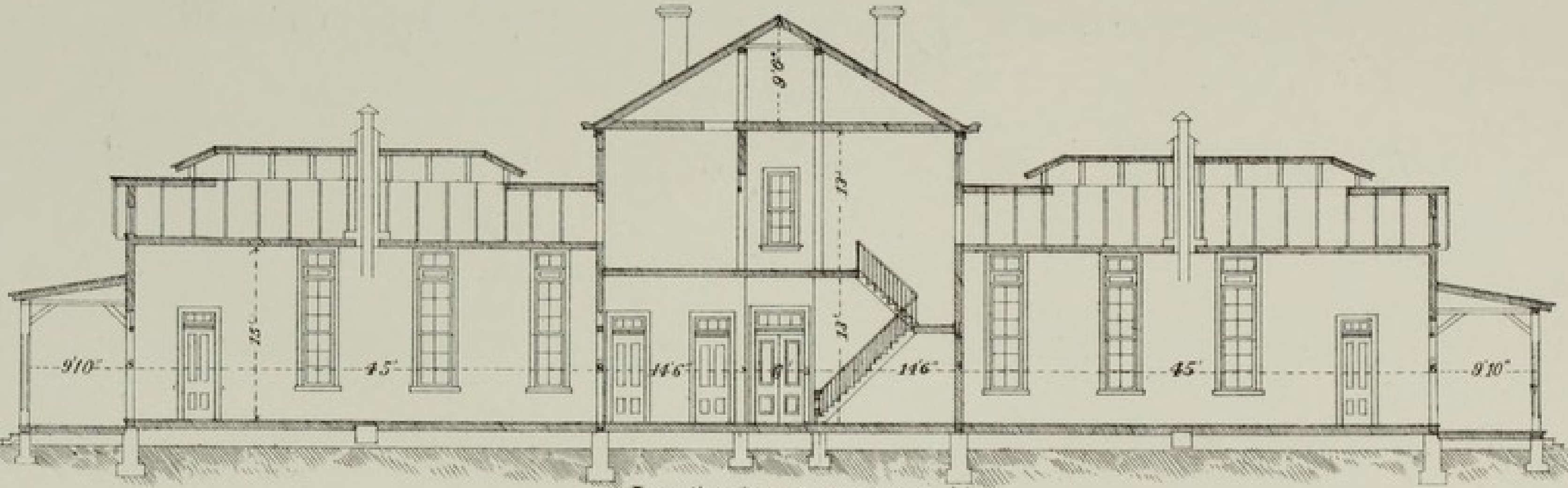
PLATE D.



Side Elevation & Section through Ward.



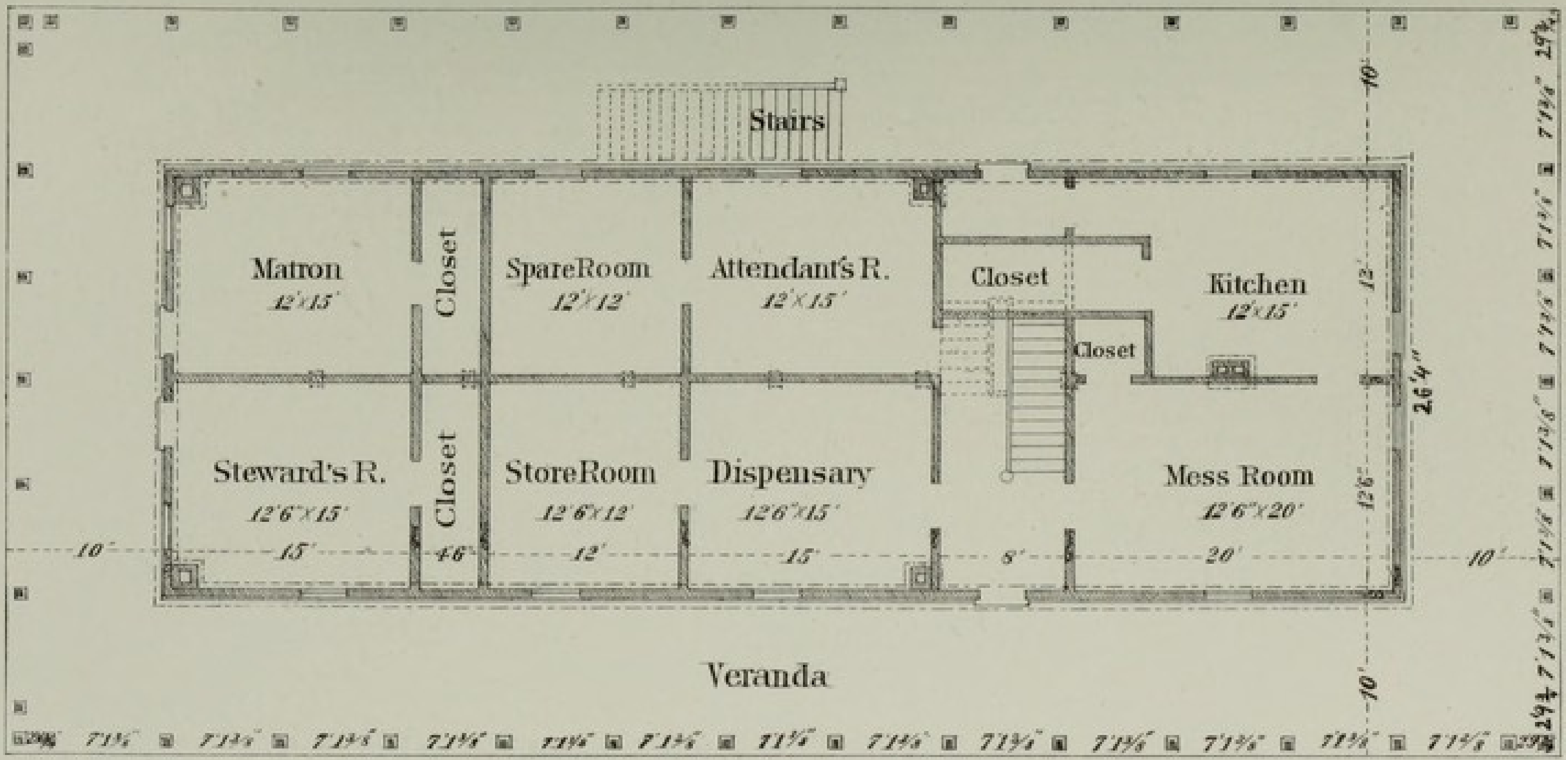
Section through Main Building.



Longitudinal Section.

I & II - APPROVED PLAN FOR A REGULATION POST HOSPITAL OF 24 BEDS OR 12 BEDS.

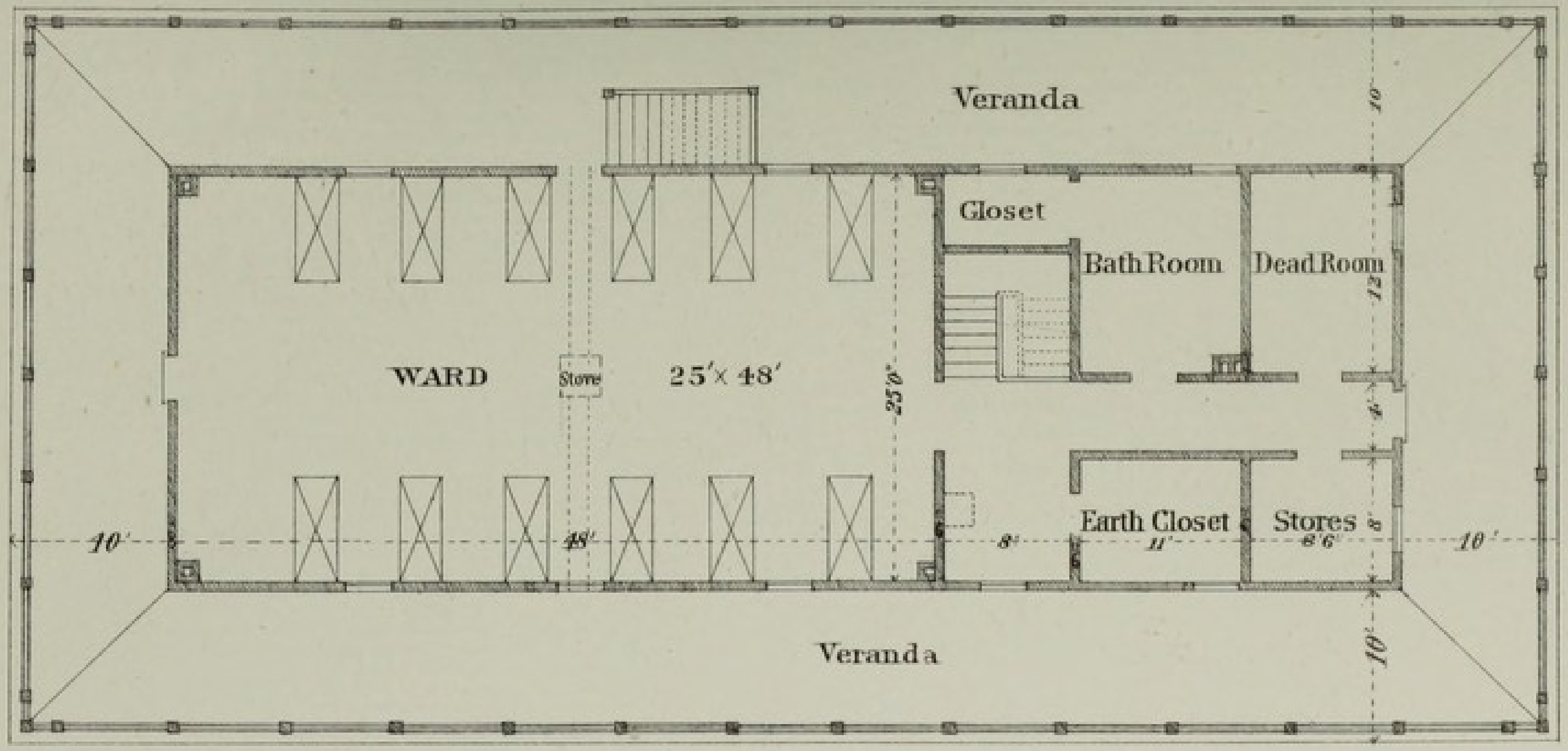
Jas. L. Kervand, Lith. Wash.



First-Story Plan.

III-APPROVED PLAN FOR A TWO-STORY REGULATION POST HOSPITAL OF 12 BEDS.

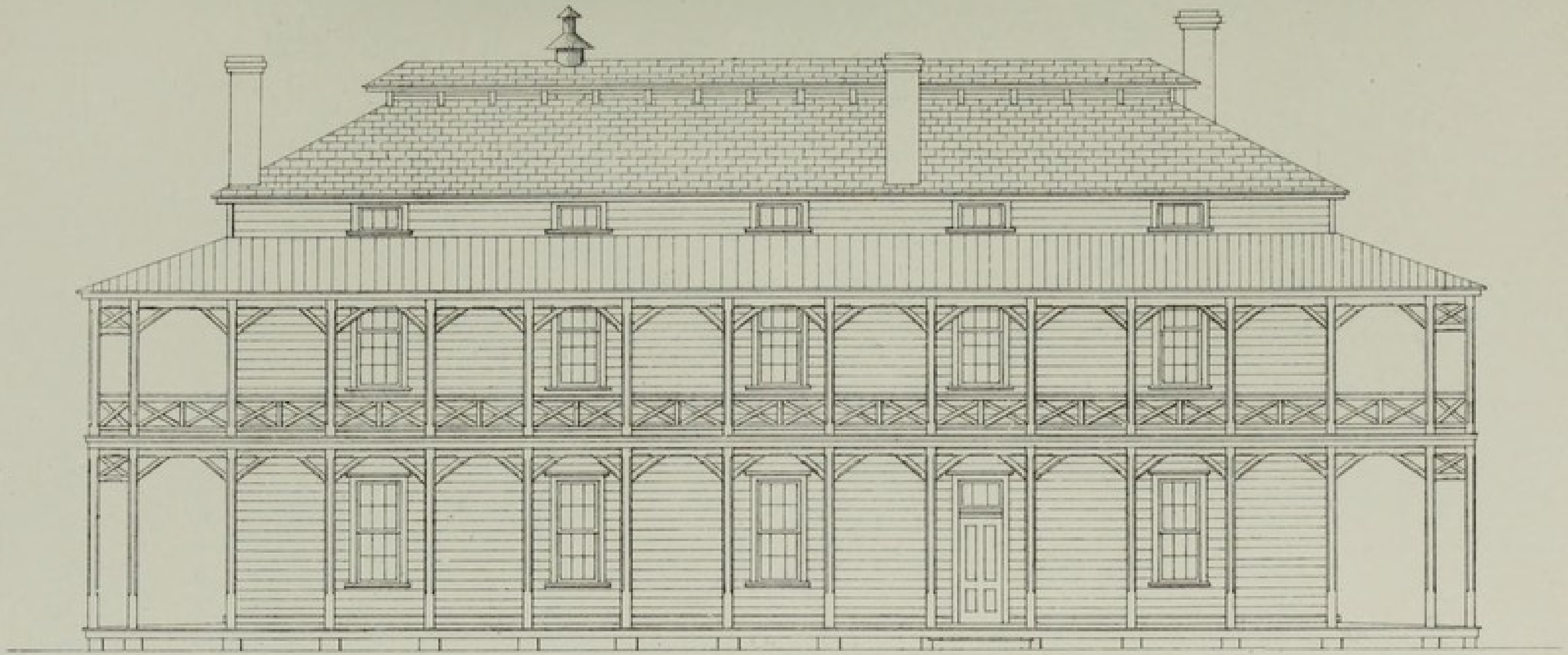
Jas. L. Kervand, Lith. Wash.



Second-Story Plan.

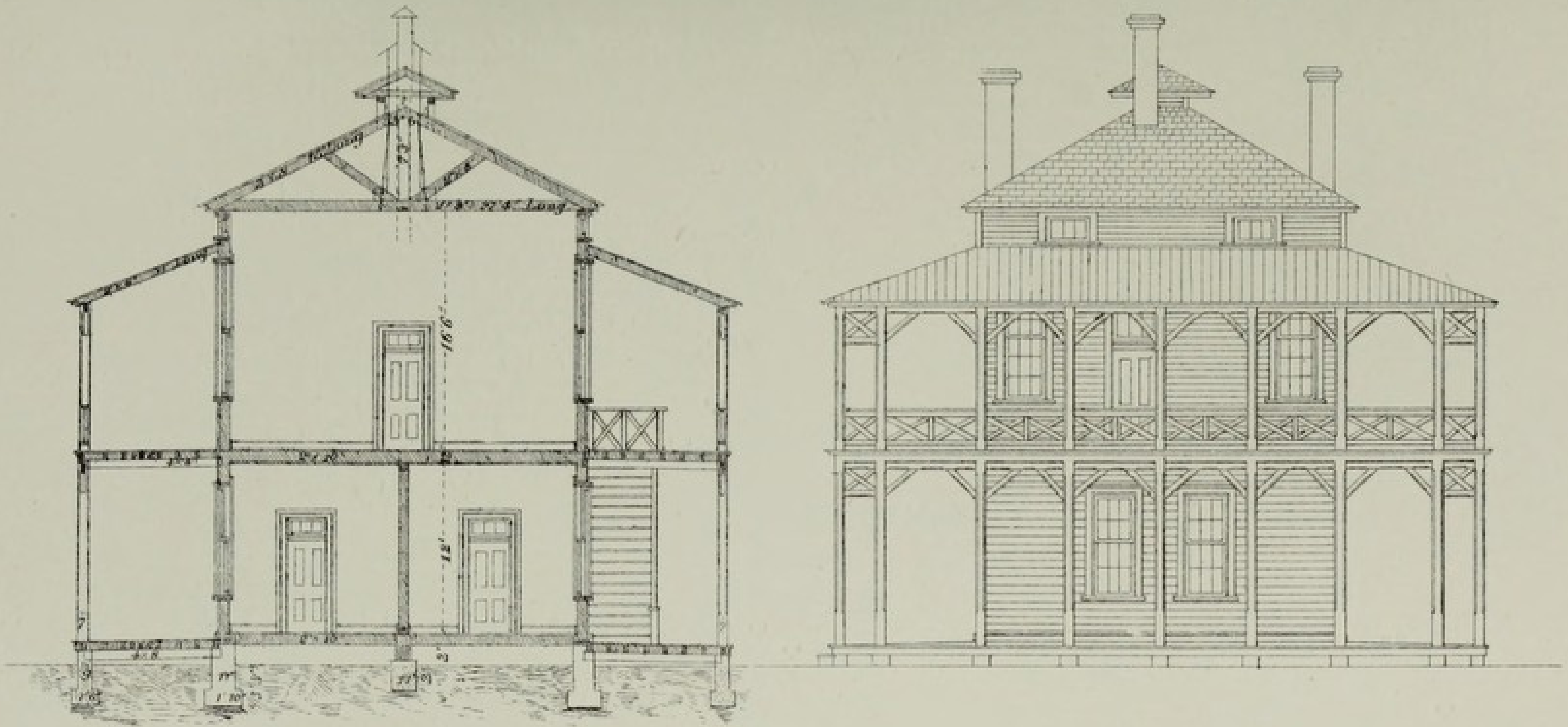
III - APPROVED PLAN FOR A TWO-STORY REGULATION POST HOSPITAL OF 12 BEDS.

Jas. I. Hervand, Lith. Wash.



Front Elevation.

III-APPROVED PLAN FOR A TWO-STORY REGULATION POST HOSPITAL OF 12 BEDS.



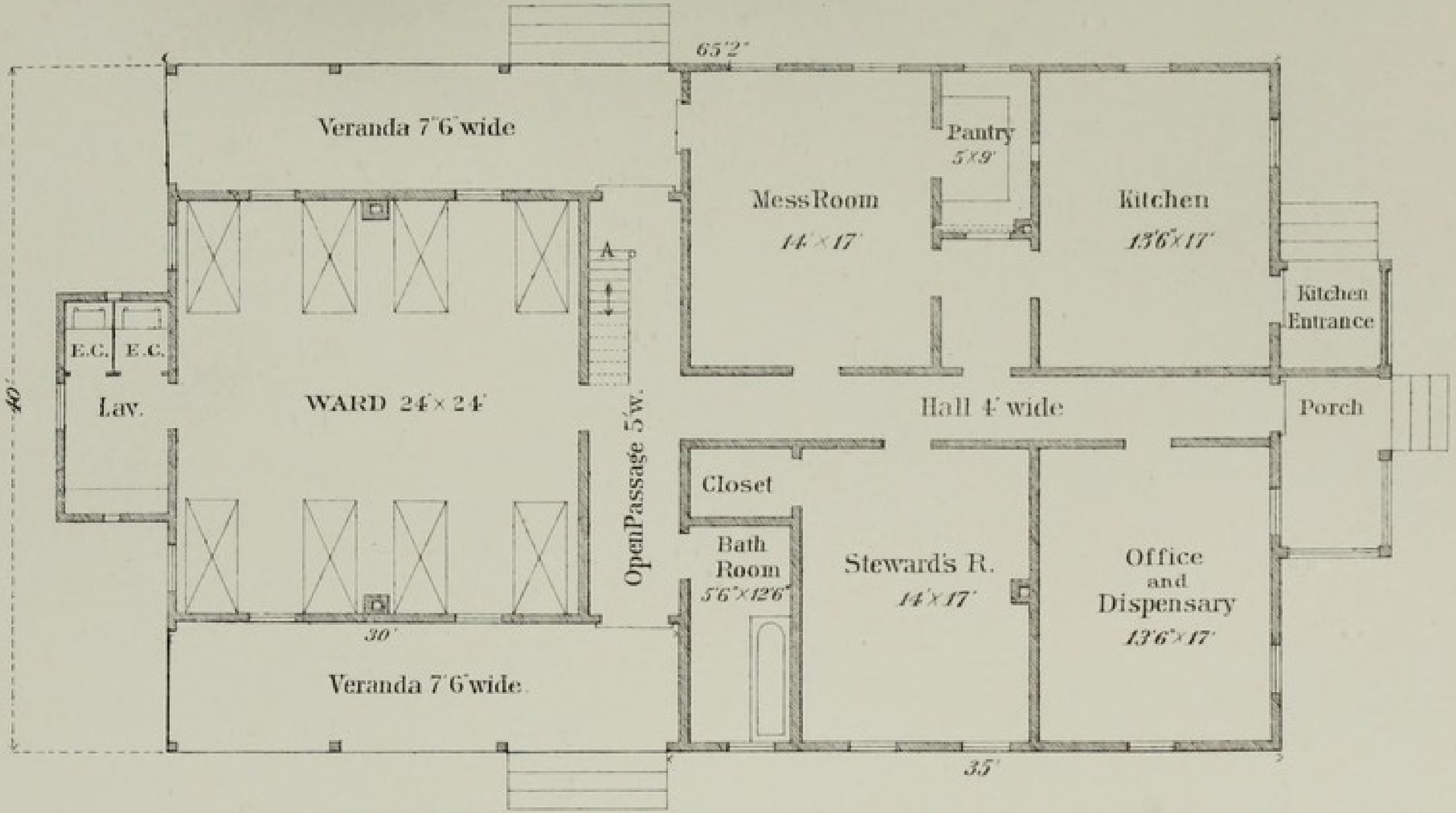
Transverse Section.

Side Elevation.

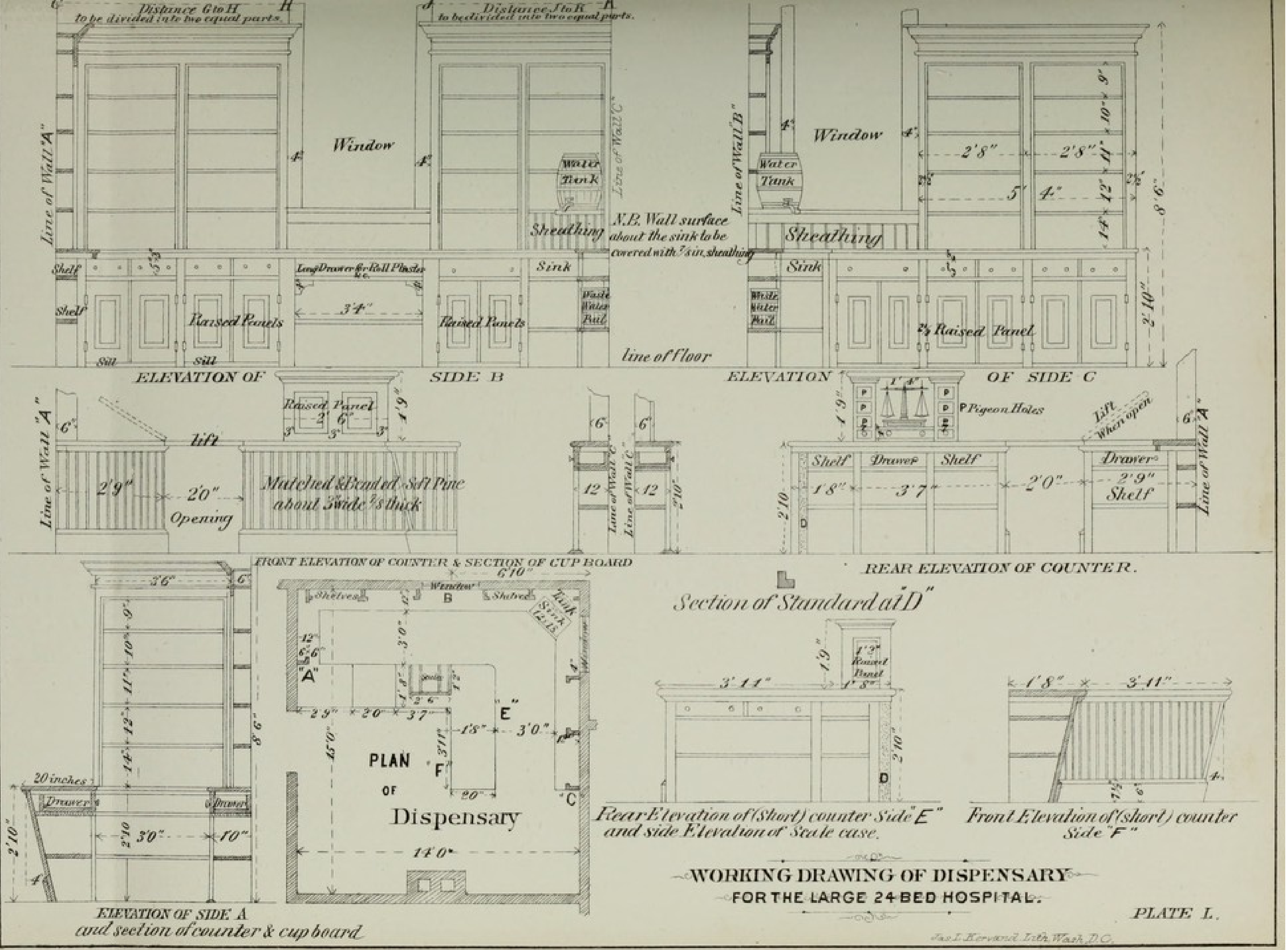
III-APPROVED PLAN FOR A TWO-STORY REGULATION POST HOSPITAL OF 12 BEDS.

PLATE K.

N.B. "A"- *Steps, leading to Store room in Attic.*
A portion of Attic to be floored and partitioned off for Store room.
Bath room to be heated by a small stove. - Pipe to go up through ceiling to Attic and then across to chimney of Stewards room.



PLAN FOR A ONE-STORY PROVISIONARY HOSPITAL OF 6 OR 8 BEDS.



ELEVATION OF SIDE B

ELEVATION OF SIDE C

FRONT ELEVATION OF COUNTER & SECTION OF CUP BOARD

REAR ELEVATION OF COUNTER.

Section of Standard at "D"

ELEVATION OF SIDE A and section of counter & cup board

PLAN OF Dispensary

Rear Elevation of (short) counter side "E" and side Elevation of Scale case.

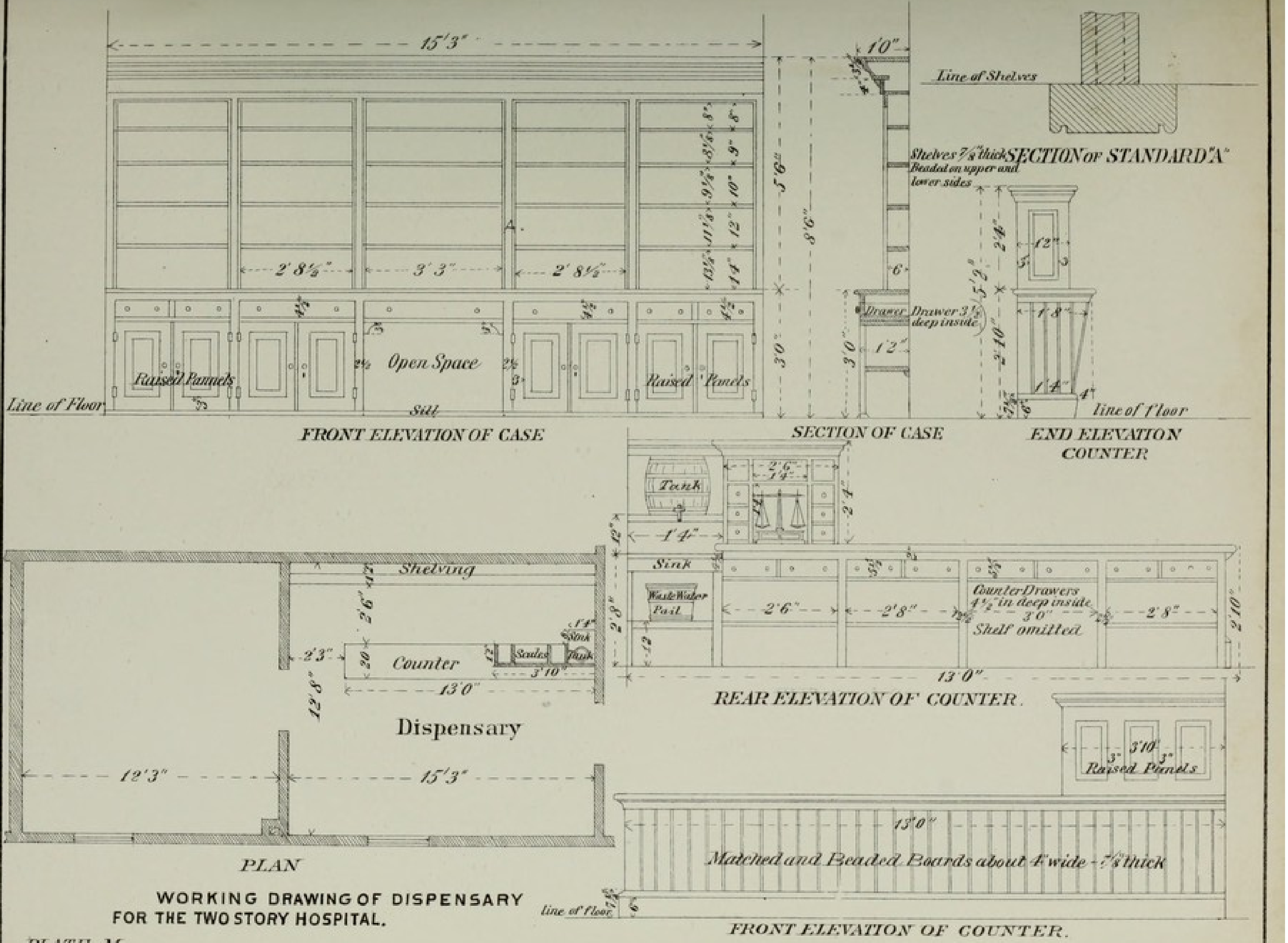
Front Elevation of (short) counter Side "F"

WORKING DRAWING OF DISPENSARY

FOR THE LARGE 24-BED HOSPITAL.

PLATE L.

Jas. L. Kervand Lith. Wash. D.C.



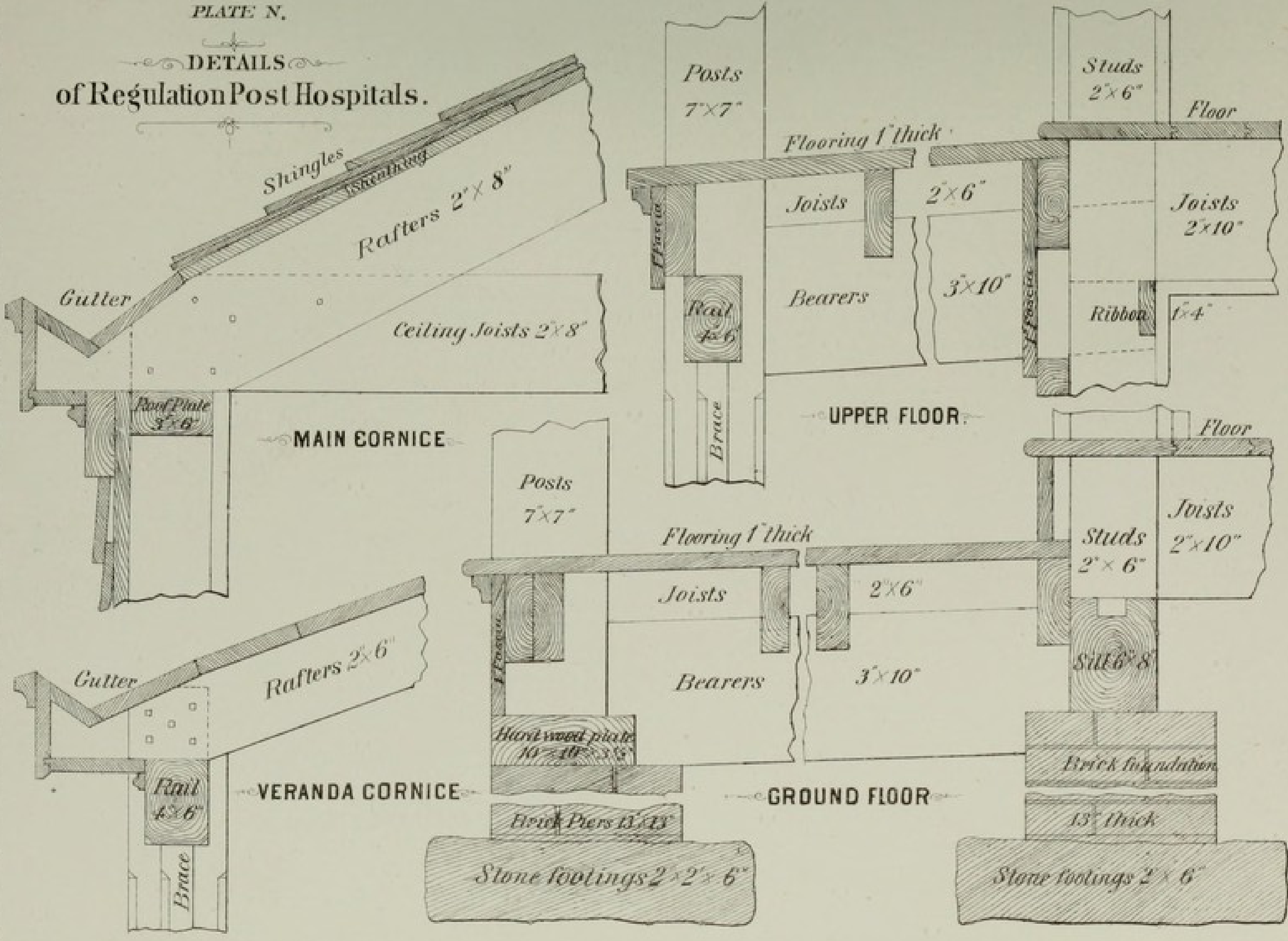
WORKING DRAWING OF DISPENSARY
FOR THE TWO STORY HOSPITAL.

PLATE M.

Jas. L. Kervand, Lith. Wash. D.C.

PLATE N.

DETAILS of Regulation Post Hospitals.



MAIN CORNICE

UPPER FLOOR.

VERANDA CORNICE

GROUND FLOOR